

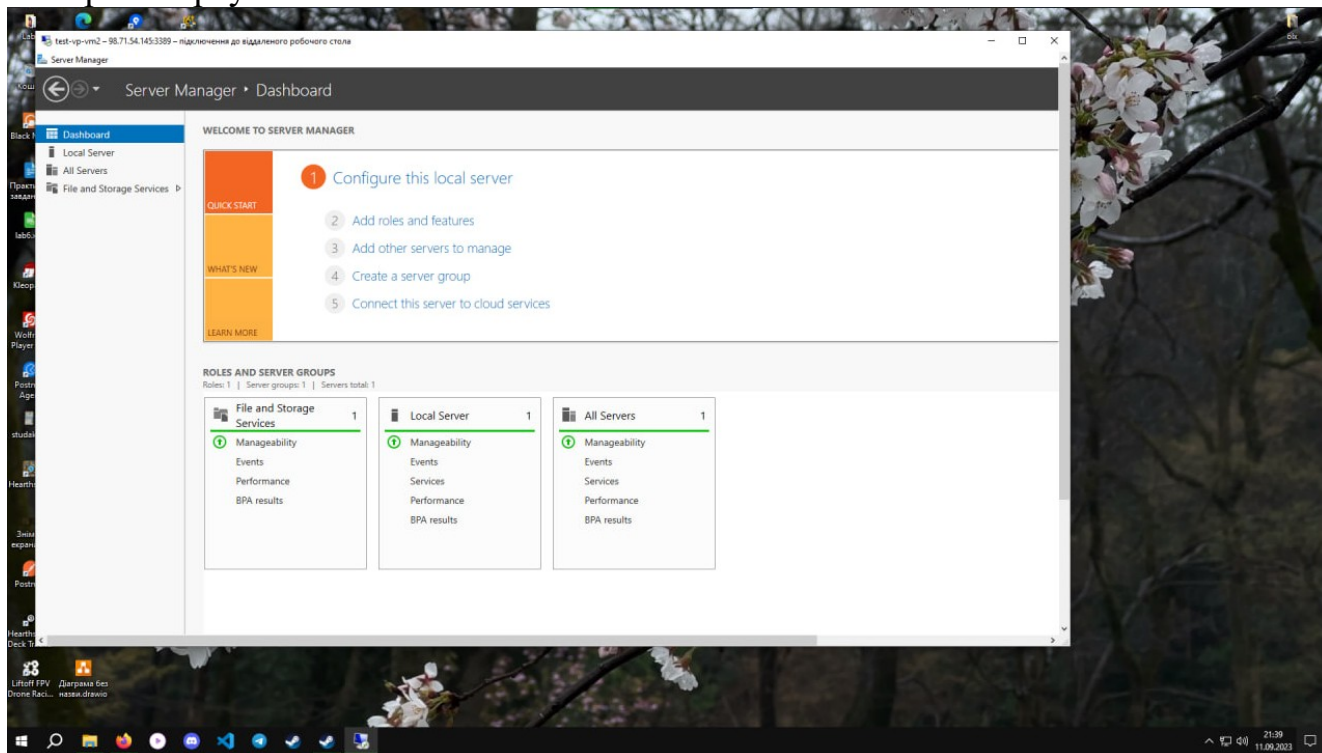
Лабораторна робота №2

Мета: навчитися створювати та керувати віртуальними машинами Windows та Linux в Azure.

Хід роботи

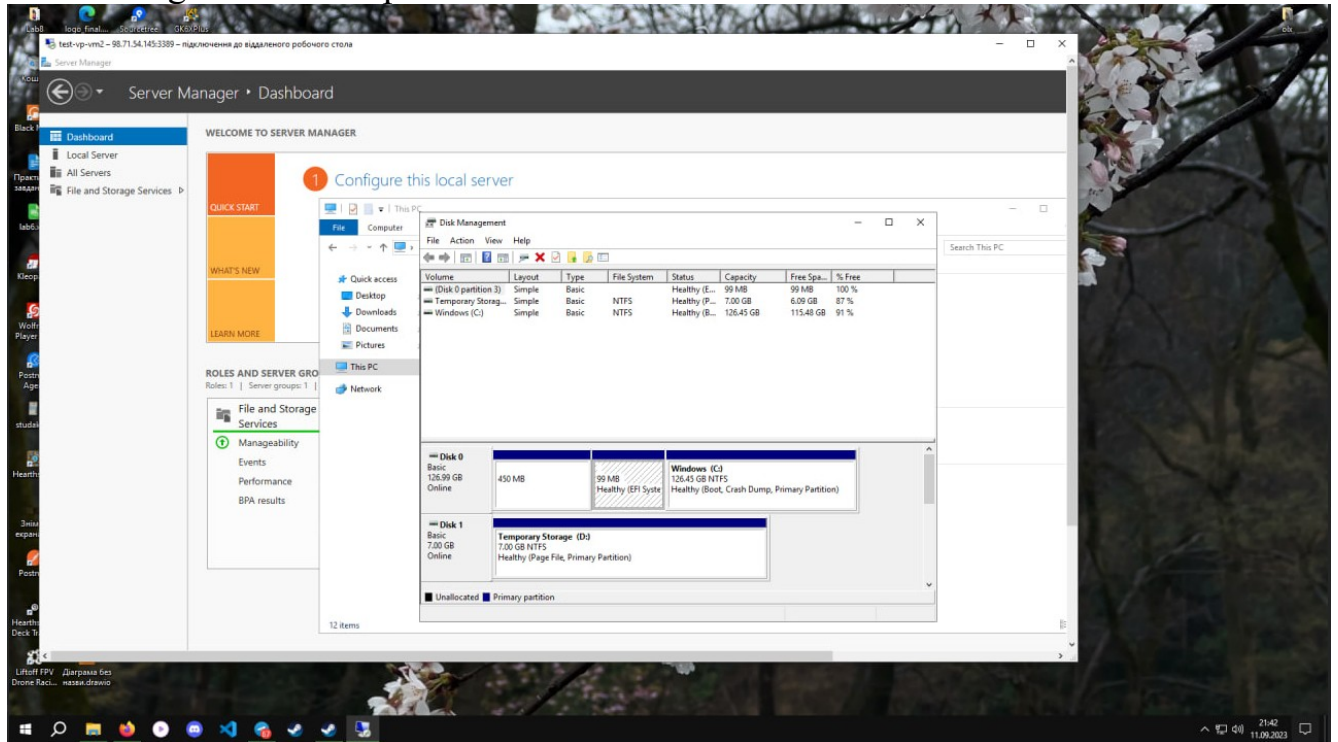
Завдання 1: Створити віртуальну машину Windows в Azure

Створена віртуальна машина Windows:

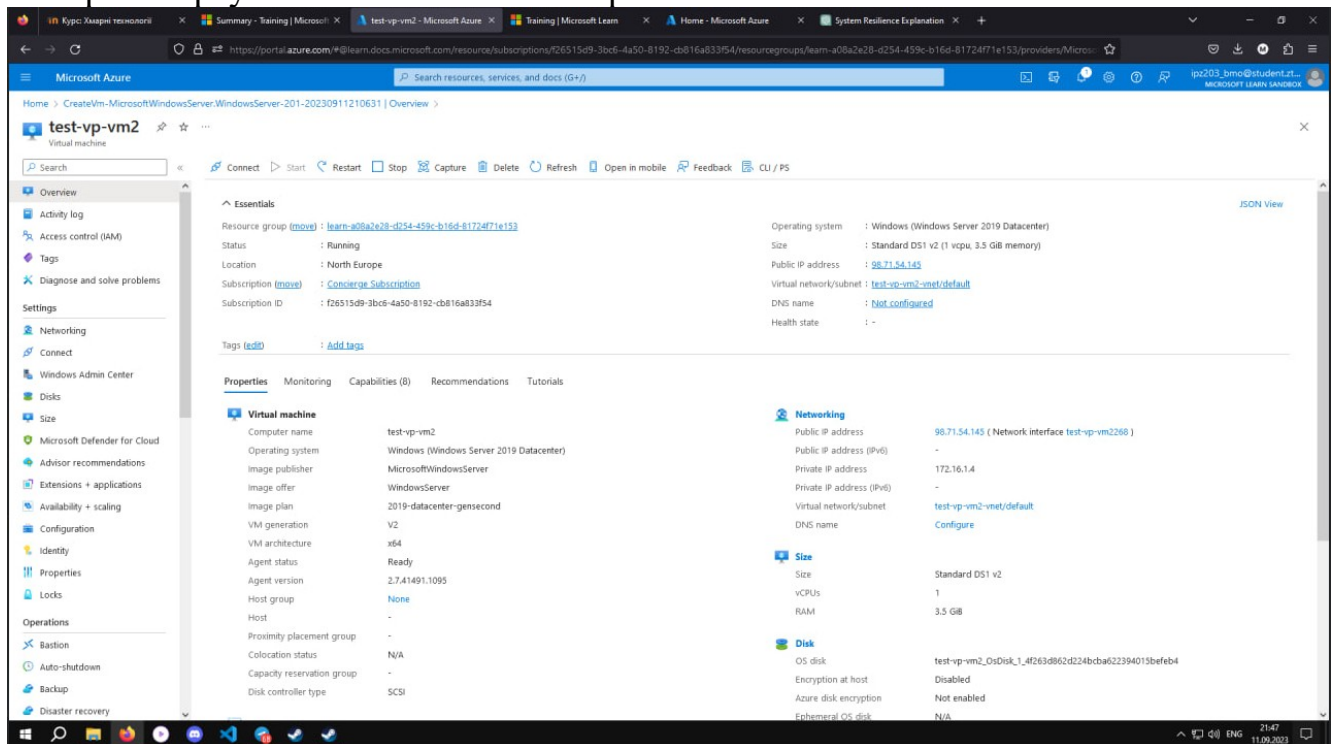


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Розроб.		Башиманівський М.			Звіт з лабораторної роботи		Лім.	Арк.
Перевір.		Вольський Р.А.						1
Керівник							ФІКТ Гр. ІПЗ-20-3[1]	
Н. контр.								
Зав. каф.								

Disk management в створеній VM:

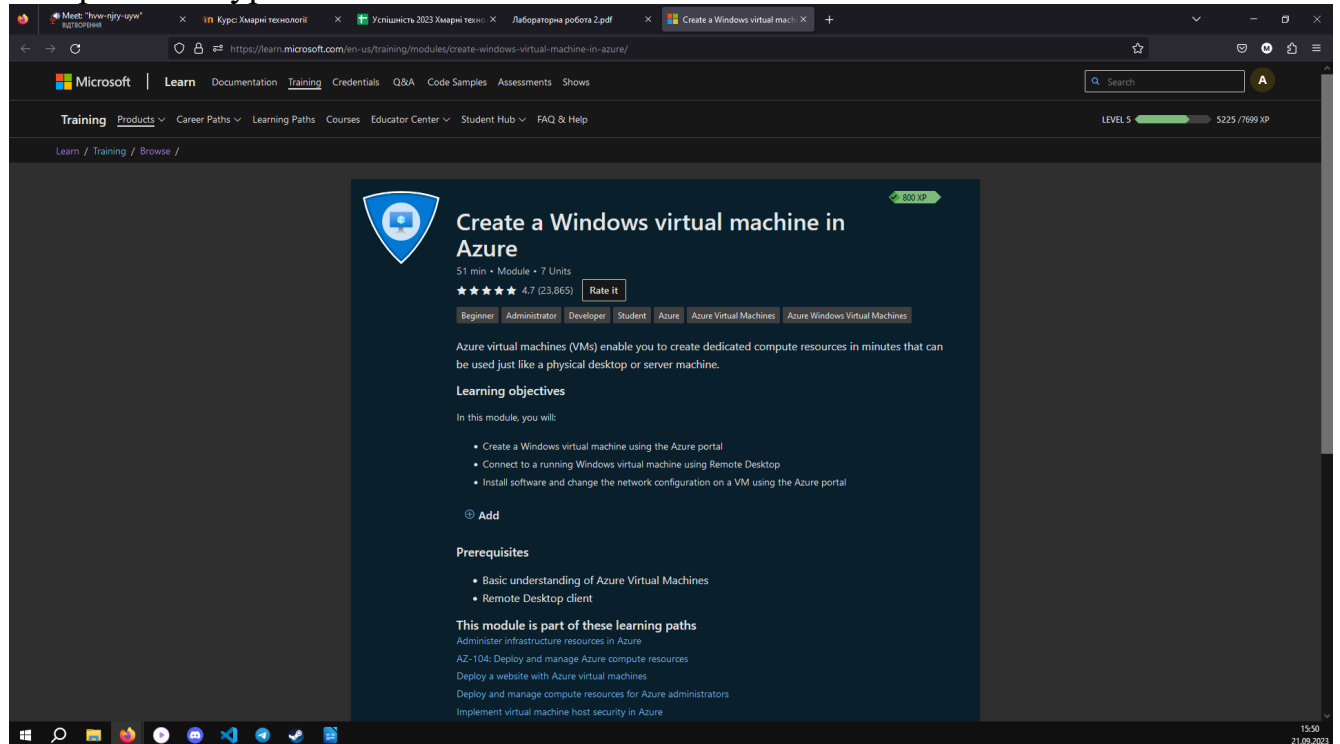


Створена віртуальна машина в Azure portals:



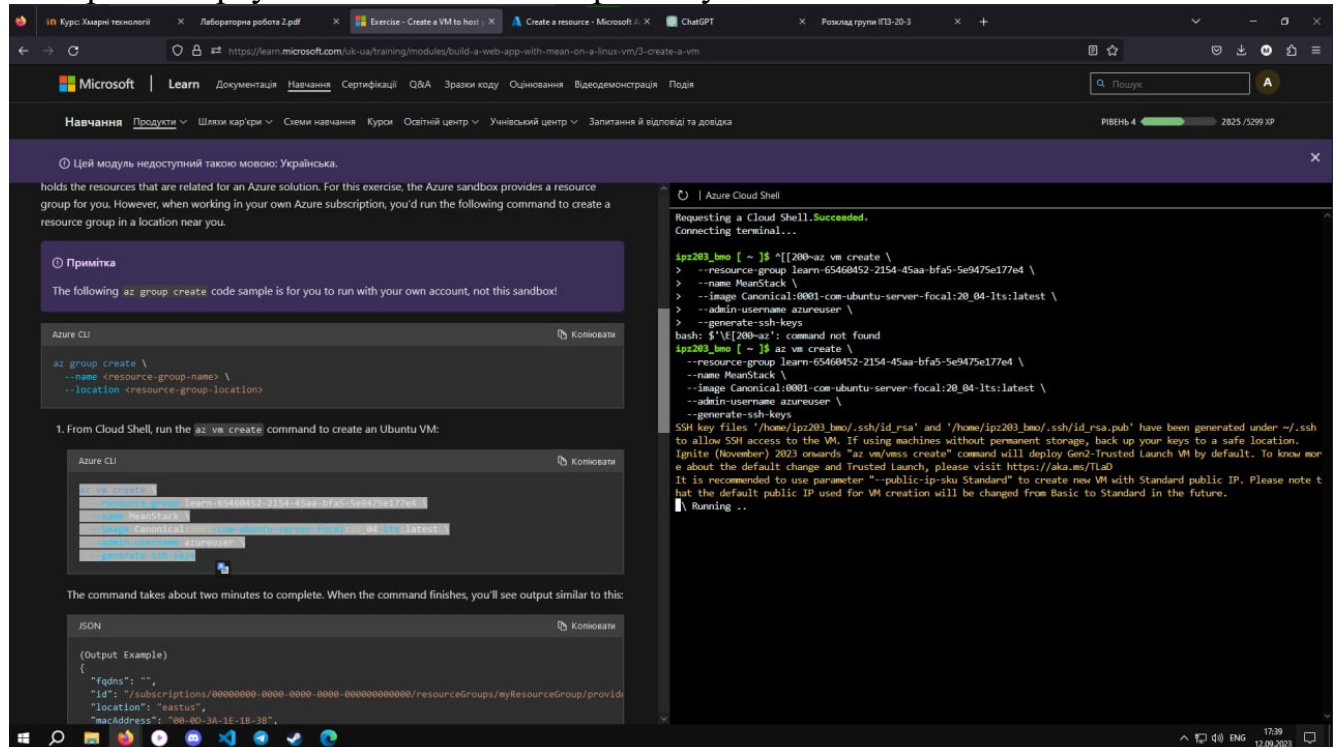
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Завершений курс:



Завдання 2: Створити віртуальну машину Linux в Azure

Створення віртуальної машини використовуючи Azure CLI:



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З'єднання з VM:

The screenshot shows a Microsoft Learn page for the exercise 'Create a VM to host'. The page provides instructions on how to create an Ubuntu VM on Azure and connect to it via SSH. The terminal window on the right shows the user running the command `ssh azureuser@$ipaddress` and being prompted to accept the host's fingerprint. The terminal output shows the user is logged into an Ubuntu 20.04.6 LTS VM.

Microsoft | Learn | Документація | Навчання | Сертифікації | Q&A | Зразки коду | Оцінювання | Відеодемонстрація | Подія

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Рівень 4 2825/3299 XP

Although the output from the `az vm create` command displays your VM's public IP address, you may find it useful to store the address in a Bash variable.

Start by running `az vm show`. This command saves the IP address in a Bash variable named `ipaddress`.

```
Azure CLI
ipaddress=$(az vm show \
  --name MeanStack \
  --resource-group learn-65468452-2154-45aa-bfa5-5e9475e177e4 \
  --show-details \
  --query [publicIps] \
  --output tsv)
```

4. Connect to your VM like this.

```
Bash
ssh azureuser@$ipaddress
```

When prompted, enter **yes** to save the VM's identity locally so future connections are trusted.

You'll use the SSH connection to configure software on the virtual machine in the next parts.

Summary

With your Ubuntu VM ready to go, you're ready to install each component of the MEAN stack. You'll start by installing MongoDB.

Наступна одиниця: Exercise - Install MongoDB

Продовжити >

Azure Cloud Shell

```
--output tsv)
az201_1m [ ~ ]$ ssh azureuser@$ipaddress
The authenticity of host '40.78.30.201' can't be established.
ED25519 key fingerprint is SHA256:IIc8FDPU7Gv4xscu3gRf-oV93b9a269Yfqa9UfTs.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '40.78.30.201' (ED25519) to the list of known hosts.
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1045-azure x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

System information as of Tue Sep 12 14:44:48 UTC 2023

System load:  0.98               Processes:    128
Usage of /:   7.3% of 28.89GB     Users logged in: 0
Memory usage: 13%               IPv4 address for eth0: 10.0.0.4
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

17 updates can be applied immediately.
16 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@MeanStack:~$
```

Завантаження необхідних пакетів:

The screenshot shows a Microsoft Learn page for the exercise 'Install MongoDB'. The page provides instructions on how to install MongoDB on an Ubuntu VM. The terminal window on the right shows the user running the command `sudo systemctl status mongod` and seeing the service running. The terminal output shows the service is active and running.

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Рівень 4 3125/3299 XP

following command:

```
Bash
sudo systemctl status mongod
```

You should see the service running:

```
Вихідні дані
azureuser@MeanStack:~$ sudo systemctl status mongod
● mongod.service - An object/document-oriented database
   Loaded: loaded (/lib/systemd/system/mongod.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2019-08-22 16:46:30 UTC; 9s ago
     Docs: man:mongod(1)
    Main PID: 18360 (mongod)
   CGroup: /system.slice/mongod.service
           └─18360 /usr/bin/mongod --config /etc/mongod.conf

Aug 22 16:46:30 MeanStack systemd[1]: Started An object/document-oriented database.
```

4. Run `mongod --version` to verify the installation.

```
Bash
mongod --version
```

Keep your SSH connection open for the next part.

Наступна одиниця: Exercise - Install Node.js

Продовжити >

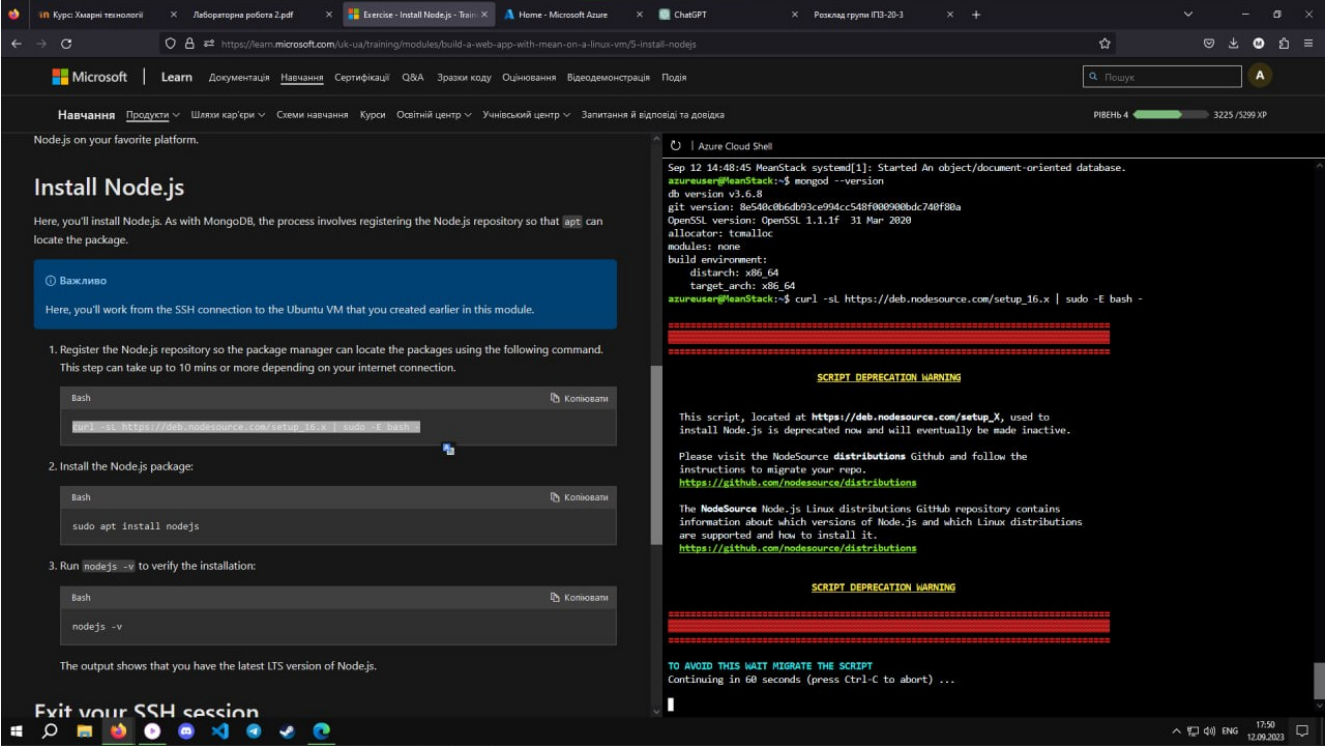
Azure Cloud Shell

```
Selecting previously unselected package mongod.
Preparing to unpack .../12-mongod-3.6.9really3.6.8+90-g8e540c0b6d-0ubuntu5.3_amd64.deb ...
Unpacking mongod (1:3.6.9really3.6.8+90-g8e540c0b6d-0ubuntu5.3) ...
Setting up libpcrcpp0v5:amd64 (2:8.39-12ubuntu0.1) ...
Setting up libtcmalloc-minimal4:amd64 (2.7-1ubuntu2) ...
Setting up libboost-filesystem1.71.0:amd64 (1.71.0-6ubuntu6) ...
Setting up libboost-iostreams1.71.0:amd64 (1.71.0-6ubuntu6) ...
Setting up libboostpython5:amd64 (1.18.1-build1) ...
Setting up libyaml-cpp0.6:amd64 (0.6.2-4ubuntu1) ...
Setting up mongo-tools (3.6.3-0ubuntu1) ...
Setting up libgoogle-perftools4:amd64 (2.7-1ubuntu2) ...
Setting up libboost-program-options1.71.0:amd64 (1.71.0-6ubuntu6) ...
Setting up mongod-clients (1:3.6.9really3.6.8+90-g8e540c0b6d-0ubuntu5.3) ...
Setting up mongod-server-core (1:3.6.9really3.6.8+90-g8e540c0b6d-0ubuntu5.3) ...
Setting up mongod-server (1:3.6.9really3.6.8+90-g8e540c0b6d-0ubuntu5.3) ...
Created symlink /etc/systemd/system/multi-user.target.wants/mongod.service → /lib/systemd/system/mongod.service.
Setting up mongod (1:3.6.9really3.6.8+90-g8e540c0b6d-0ubuntu5.3) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9) ...
Processing triggers for systemd (245.4-ubuntu3.22) ...
azureuser@MeanStack:~$ sudo systemctl status mongod
● mongod.service - An object/document-oriented database
   Loaded: loaded (/lib/systemd/system/mongod.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2023-09-12 14:48:45 UTC; 9s ago
     Docs: man:mongod(1)
    Main PID: 12446 (mongod)
      Tasks: 23 (limit: 4881)
     Memory: 44.9M
   CGroup: /system.slice/mongod.service
           └─12446 /usr/bin/mongod --unixSocketPrefix=/run/mongod --config /etc/mongod.conf

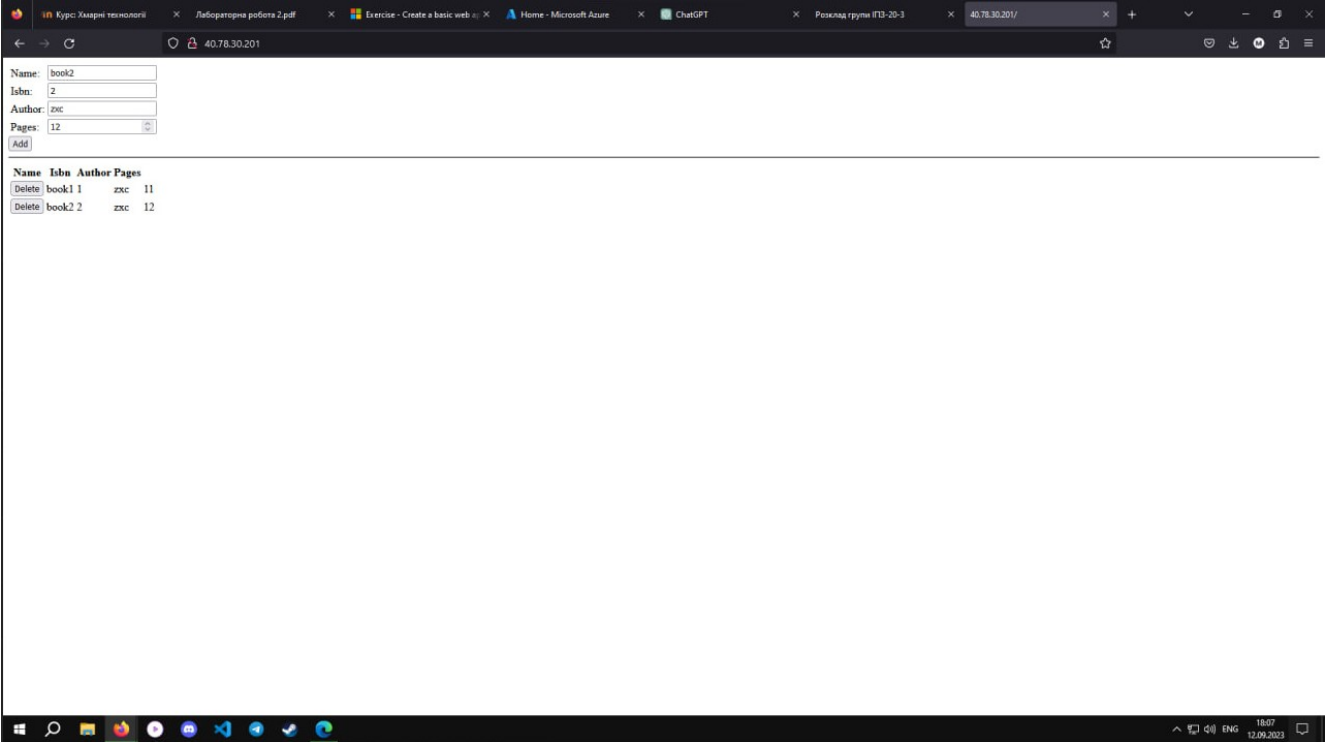
Sep 12 14:48:45 MeanStack systemd[1]: Started An object/document-oriented database.
azureuser@MeanStack:~$ mongod --version
db version v3.6.8
git version: 8e540c0b6d93ce994cc548f000900bdc740f0ba
OpenSSL version: OpenSSL 1.1.1f  31 Mar 2020
allocator: tcmalloc
modules: none
build environment:
  distarch: x86_64
  target_arch: x86_64
azureuser@MeanStack:~$
```

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Встановлення NodeJS:



Створений додаток:



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LEVEL 5 5225 / 7699 XP

Learn / Training / Browse /

Linux on Azure

3 hr 30 min • Learning Path • 4 Modules

Beginner Solution Architect Administrator Developer Solution Architect Azure Azure Virtual Machines


This comprehensive learning path reviews deployment and management of Linux on Azure. Learn about cloud computing concepts, Linux IaaS and PaaS solutions and benefits and Azure cloud services. Discover how to migrate and extend your Linux-based workloads on Azure with improved scalability, security, and privacy.

Prerequisites

- Ability to configure and administer a Linux server
- Access to a Microsoft Azure account
- Ability to navigate the Azure portal

+ Add

Modules in this learning path



Introduction to Linux on Azure

44 min • Module • 7 Units

★★★★★ 4.8 (201)

This module helps you understand the types of services and platforms Azure provides for Linux environments. Perhaps you're exploring the migration of Linux-based workloads to the cloud or you're looking at rearchitecting Linux-based applications to increase agility and reduce time to market. After reviewing this material, you should be able to choose which types of services you'll

Створення віртуальної машини та з'єднання з нею:

The screenshot displays the Microsoft Learn interface for the 'Exercise - Test your new virtual machine' page. The page is divided into two main sections: 'Output' on the left and 'Azure Cloud Shell' on the right. The 'Output' section shows the terminal output of the 'ls' command, listing files like 'Documentation', 'Management', and 'Support'. The 'Azure Cloud Shell' section shows the terminal output of the 'ls' command, listing files like 'Documentation', 'Management', and 'Support'. The page also includes a 'Continue' button at the bottom left and a 'Next unit: Exercise - Explore other VM images' link at the bottom right.

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LEVEL 5 5225 / 7699 XP

Manage virtual machines with the Azure CLI

51 min • Module • 9 Units

★★★★★ 4.7 (10,964) [Rate It](#)

Beginner Developer Administrator Solution Architect Student Azure Azure Virtual Machines Azure CLIs

Learn how to use the cross-platform Azure CLI to create, start, stop, and perform other management tasks related to virtual machines in Azure.

Learning objectives

In this module, you will:

- Create a virtual machine with the Azure CLI.
- Resize virtual machines with the Azure CLI.
- Perform basic management tasks using the Azure CLI.
- Connect to a running VM with SSH and the Azure CLI.

[Add](#)

Prerequisites

Basic understanding of the Azure CLI tool from the Control Azure services with the CLI module.

This module is part of these learning paths

Administer infrastructure resources in Azure
Architect compute infrastructure in Azure
AZ-104: Deploy and manage Azure compute resources
Deploy and manage compute resources for Azure administrators

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