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# caution

- This slide was created for the April 18, 2025 UTokyo Azure Usage Briefing.
- Azure specifications change frequently, so if the following does not work, please [refer to the Azure documentation](#).

# Let's create a virtual machine

Case study:

“I want to LoRA fine-tuning the Llama-3 model of 3B.”

# What is a Virtual Machine?

- A **virtual machine (VM)** is a technology that allows you to create a virtual computer on a cloud server.
- You have the flexibility to customize your computing environment just like building your own physical machine.
  - Want a **GPU**? You can include one.
  - Need **48 CPUs**? That's possible.
  - Want **1TB of storage**? No problem.
- You can also create **multiple virtual machines with different specifications** and have them work together to process a single task or file. This allows for **parallel processing** and is useful for handling large-scale workloads or experiments.



# Roadmap

- 1. Check the required machine specifications**
- 2. Create a Virtual Machine**
  - 2.1 Request a **quota** (approval is required for high-cost resources)
  - 2.2 Create a VM using the approved resources
- 3. Log in to the VM from your local computer**
- 4. Share files across multiple virtual machines**
  - 4.1 Create a **Storage Account**
  - 4.2 Create a **File Share**
  - 4.3 **Mount** the file share from each virtual machine
  - 4.4 Configure automatic mounting on reboot
  - 4.5 Verify that all virtual machines can read and write to the same file share
- 5. Stop the virtual machine to avoid unnecessary charges**

1. Check the required machine specifications

# What kind of Azure virtual machine resources match your needs?

- If you want to fine-tune a **large language model**, you'll likely need a **GPU**.
- However, since GPUs are expensive, it's best not to choose a machine with higher specs than necessary.
- I asked **ChatGPT** for advice.  
(Sometimes, ChatGPT may provide incorrect or outdated information, so please make sure to double-check things yourself.)

## ChatGPT's RESPONSE:

- ✓ **LoRA fine-tuning for LLaMA-3 13B requires an A100 80GB GPU**
- ✓ The optimal choice is **Standard\_NC24ads\_A100\_v4** (1x A100, 24 vCPUs)
- ✓ When requesting a quota, apply for "**Standard NCADS\_A100\_v4 Family vCPUs**" with **24 vCPUs**
- ✓ If you're planning larger-scale training, consider requesting **48 or 96 vCPUs**

## Product Availability by Region

With 60+ announced regions, more than any other cloud provider, Azure makes it easy to choose the right region for your workloads. © Microsoft 2024. All rights reserved. Release dates, features, and requirements are subject to change without notice. See the Microsoft Azure website for more information. STATUTORY, AS TO THE INFORMATION ON THIS PAGE. \* Reserved Access Regions: Certain regions are access restricted to support specific customer scenarios.

You can check which resources are available in each region [on this page](#). "SKU" stands for "Stock Keeping Unit."

Virtual Machine

Select a Geography

● Generally Available ■ In Public Preview

Geographies		Japan		Korea		Mexico	New Zealand
Products	Product SKU	Japan East	Japan West	Korea Central	Korea South*	Mexico Central	New Zealand North
	NC-series						
	NC <b>A100</b> v4 Series	●		●			
	NCads A10 v4 series						
	NCads H100 v5-series						
	NCasT4v3-series	●					
	NCsv2-series	●					
	NCsv3-series	●					
	NCv2-series						
	NCv3-series	●		●			
	ND-Series						
	ND <b>A100</b> v4 Series						
	NDasrv4-series						
	NDm <b>A100</b> v4 Series						
	NDs-series						
	NDv2-series						
	NG_V620-v1-series	●					
	NP-series						■

"Japan East" does not have many resources.

# Product Availability by Region

With 60+ announced regions, more than any other cloud provider, Azure makes it easy to choose the datacenter and regions that are right for you and your customers. Select a geography to view available products.

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\* Reserved Access Regions: Certain regions are access restricted to support specific customer scenarios, for example in-country disaster recovery. See [Business continuity and disaster recovery \(BCDR\)](#).

Search Products  Select a Geography All

● Generally Available ■ In Public Preview

Geographies		United Kingdom		United States						
Products	Product SKU	South	UK West	Central US	East US	East US 2	North Central US	South Central US	West Central US	West US
	NCads H100 v3-series				●			●		
	NCasT4v3-series	●		●	●	●	●	●		●
	NCsv2-series				●			●		
	NCsv3-series	●		●	●	●		●		●
	NCv2-series				●			●		
	NCv3-series	●			●	●		●		
	ND-Series				●					
	ND <b>A100</b> v4 Series				●			●		
	NDasrv4-series				●			●		
	NDm <b>A100</b> v4 Series					●		●		
	NDs-series				●					
	NDv2-series				●			●		
	NG_V620-v1-series					●				
					■					
					●	●	●	●		●
					●	●		●		●
					●	●	●	●		●
					■	■	■	■		■
	On demand capacity reservations for Azure Virtual Machines	●	●	●	●	●	●	●	●	●
	PR series				●			●		

Virtual machines seem to be concentrated in regions like **Southeast Asia, West Europe, East US, East US 2, South Central US, and West US 2.**

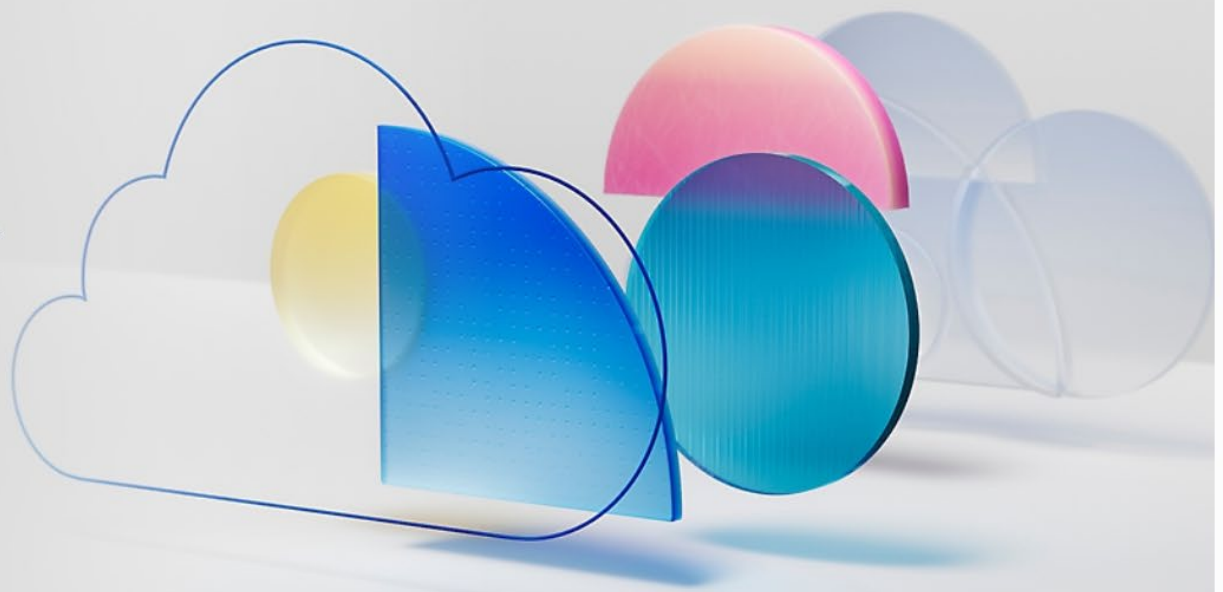
Check the price [here](#)

# Azure pricing

Get the best value at every stage of your cloud journey with simple pricing and predictable, transparent costs.

See pricing by product

Pricing calculator



**AI-powered assistant**  
Need help finding a product or solution? Try the AI-powered assistant.

Ask a question about Azure.

How will Azure AI help my business? How can I try Azure?

AI-powered assistant

Overview

Pricing by product

Estimate and budget

Manage and enhance

Resources

FAQ

Next steps

Request a pricing quote

Get started with Azure



### Azure Virtual Machines

Provision Windows and Linux VMs in seconds.

[See pricing page](#)



### Azure Storage

Durable, highly available, and massively scalable cloud storage.

[See pricing page](#)



### Azure SQL Database

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

[See pricing page](#)



### Azure App Service

Quickly create powerful cloud apps for web and mobile.

[See pricing page](#)



### Azure AI services

Add cognitive capabilities to apps with APIs and AI services.

[See pricing page](#)



### Azure Blob Storage

Massively scalable and secure object storage.

[See pricing page](#)



### Azure Cosmos DB

Build or modernize scalable, high-performance apps.

[See pricing page](#)



### Azure Functions

Execute event-driven serverless code functions with an end-to-end development experience.

[See pricing page](#)

> See all products

AI-powered assistant +

OS/Software: Ubuntu  
Category: GPU  
VM series: All  
region: East US 2  
Currency: United States – Dollar (\$) USD  
Display pricing by: Hour  
Pricing model & comparison: Savings plan (1 & 3 year)

For East US 2

Showing 21 applicable virtual machine series.

### NC A100 v4 series

NC A100 v4 Azure Virtual Machines, powered by NVIDIA Ampere A100 80GB PCIe GPUs and AMD EPYC M... and cost efficient for a variety of real-world Applied AI workload.

Price for 1X A100 GPU  
In East US 2, it's  
approximately ¥580 per hour.

Instance	Core(s)	RAM	Temporary storage	GPU	Pay as you go	1 year savings plan	3 year savings plan	Spot	Add to estimate
NC24ads A100 v4	24	220 GiB	958 GiB	1X A100	\$3.6730/hour	\$3.0574/hour ~16% savings	\$2.2659/hour ~38% savings	\$0.6222/hour ~83% savings	+
NC48ads A100 v4	48	440 GiB	1,916 GiB	2X A100	\$7.3460/hour	\$6.1148/hour ~16% savings	\$4.5318/hour ~38% savings	\$1.2444/hour ~83% savings	+
NC96ads A100 v4	96	880 GiB	3,832 GiB	4X A100	\$14.6920/hour	\$12.2296/hour ~16% savings	\$9.0635/hour ~38% savings	\$2.4888/hour ~83% savings	+

### NCads A10 v4 series

The NCads A10 v4 series is based on the Nvidia A10 GPU and specifically designed for AI inferencing and GPU compute workloads. Azure is introducing GPU partitioned VM sizes to provide VM choices starting with 1/2 A10 and scale up to a full A10 or 2\*A10 GPUs.



OS/Software: Ubuntu  
Category: GPU  
VM series: All  
region: Japan East  
Currency: United States – Dollar (\$) USD  
Display pricing by: Hour  
Pricing model & comparison: Savings plan (1 & 3 year)

Showing 21 applicable virtual machine series.

**East Japan is higher than East US2!**

**Price for 1X A100 GPU  
In East Japan, it's approximately  
¥700 per hour.**

NC **A100** v4  
NC **A100** v4 Az  
and cost effici

GPUs and AMD EPYC Milan processors, are optimized for delivery leadership-class performance

Instance	Core(s)	RAM	Temporary storage	GPU	Pay as you go	1 year savings plan	3 year savings plan	Spot	Add to estimate
NC24ads <b>A100</b> v4	24	220 GiB	958 GiB	1X <b>A100</b>	\$5.3260/hour	\$4.4334/hour ~16% savings	\$3.2856/hour ~38% savings	\$0.8522/hour ~83% savings	+
NC48ads <b>A100</b> v4	48	440 GiB	1,916 GiB	2X <b>A100</b>	\$10.6520/hour	\$8.8667/hour ~16% savings	\$6.5712/hour ~38% savings	\$1.7043/hour ~83% savings	+
NC96ads <b>A100</b> v4	96	880 GiB	3,832 GiB	4X <b>A100</b>	\$21.3030/hour	\$17.7326/hour ~16% savings	\$13.1418/hour ~38% savings	\$3.4085/hour ~84% savings	+

### NCads A10 v4 series

The NCads A10 v4 series is based on the Nvidia A10 GPU and specifically designed for AI inferencing and GPU compute workloads. Azure is introducing GPU partitioned VM sizes to provide flexible VM choices starting with 1/2 A10 and scale up to a full A10 or 2\*A10 GPUs.

OS/Software: Ubuntu  
Category: GPU  
VM series: All  
region: Japan East  
Currency: United States – Dollar (\$) USD  
Display pricing by: Hour  
Pricing model & comparison: Savings plan (1 & 3 year)

Showing 21 applicable virtual machine series.

### NC A100 v4 series

NC A100 v4 Azure Virtual M...  
and cost efficient for a variety of real-world Applied AI workload.

**Price for 1× A100 GPU**  
In East Japan, the cost is approximately **¥700 per hour.**

East Japan is higher than East US2!

**Spot use is extremely cheap!**  
About **110 yen / hour**  
(83% off at this time!)

Instance	Core(s)	RAM	Temporary storage	GPU	Pay as you go	1 year savings plan	3 year saving plan	Spot	Add to estimate
NC24ads A100 v4	24	220 GiB	958 GiB	1X A100	\$5.3260/hour	\$4.4334/hour ~16% savings	\$3.2856/hour ~38% savings	\$0.8522/hour ~83% savings	+
NC48ads A100 v4	48	440 GiB	1,916 GiB	2X A100	\$10.6520/hour	\$8.8667/hour ~16% savings	\$6.5712/hour ~38% savings	\$1.7043/hour ~83% savings	+
NC96ads A100 v4	96	880 GiB	3,832 GiB	4X A100	\$21.3030/hour	\$17.7326/hour ~16% savings	\$13.1418/hour ~38% savings	\$3.4085/hour ~84% savings	+

### NCads A10 v4 series

The NCads A10 v4 series is based on the Nvidia A10 GPU and specifically designed for AI inferencing and GPU compute workloads. Azure is introducing GPU partitioned VM sizes to provide flexible VM choices starting with 1/2 A10 and scale up to a full A10 or 2\*A10 GPUs.

# What is a Spot Virtual Machine? ([Azure documentation](#))

You can use spot VMs at a **discounted rate (up to 90% off)** when Azure has surplus capacity. However, if demand for the resource increases, your VM may be **forcibly stopped**.

- The **discount rate** varies depending on **VM size, region, and time of day**.

## Deletion Type:

Specifies under what conditions the VM will be deleted:

- **Capacity only:** The VM is deleted when Azure runs low on capacity.
- **Price or capacity:** The VM is deleted either when capacity runs low **or** the **price exceeds your set threshold**.

## Deletion Policy:

Defines **what gets deleted** when deletion is triggered:

- **Stop / Deallocate:** The VM is stopped, but **disks and data are retained**.  
You can restart the VM later and resume from the previous state.  
*(No charges for CPU or GPU while stopped, but **disk and network charges continue**.)*
- **Delete:** The **entire VM, including disks**, is cleaned up.  
*(Make sure to save important data to separate storage beforehand. Once deleted, you are **no longer billed** for this VM.)*

## **2. Create a Virtual Machine**



# Virtual machines

The University of Tokyo (univtokyo.onmicrosoft.com)

**+ Create** | Switch to classic | Reservations | Manage view | Refresh | Export to CSV | Open query | Assign tags | Start | Restart | Stop

Filter for any field... | Subscription equals all | Type equals all | Resource group equals all | Location equals all | Add filter

Showing 1 to 2 of 2 records. No grouping | List view

Name	Subscription	Resource group	Location	Status	Operating system	Size	Public IP address
llama3-vm	1923306880-Yamak...	llama3-finetuning	East US 2	Stopped (deallocated)	Linux	Standard_NC24ads_A1...	172.203.39.97
llama3-vm2	1923306880-Yamak...	llama3-finetuning	East US 2	Running	Linux	Standard_D8s_v3	172.177.138.56

# Virtual machines

The University of Tokyo (univtokyo.onmicrosoft.com)

+ Create → Switch to classic Reservations Manage view Refresh Export to CSV Open query Assign tags Start Restart Stop

- Azure virtual machine**  
Create a virtual machine hosted by Azure
- ... virtual machine with preset configuration  
Create a virtual machine with presets based on your workloads
- More VMs and related solutions  
Discover and deploy full workloads and Azure products for your business needs

Type equals all Resource group equals all Location equals all Add filter No grouping List view

Resource group	Location	Status	Operating system	Size	Public IP address
llama3-finetuning	East US 2	Stopped (deallocated)	Linux	Standard_NC24ads_A1...	172.203.39.97
llama3-finetuning	East US 2	Running	Linux	Standard_D8s_v3	172.177.138.56

# Create a virtual machine

Help me create a low cost VM | Help me create a VM optimized for high availability | Help me choose the right VM size for my workload

Basics | Disks | Networking | Management | Monitoring | Advanced | Tags | Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

## Project details

Select the subscription to manage deployed resources and costs. Use resource groups to organize your resources.

Subscription \* ⓘ 1923306880-YamakataTrain...

Resource group \* ⓘ (New) Resource group

[Create new](#)

## Instance details

Virtual machine name \* ⓘ

Region \* ⓘ

Availability options ⓘ

Zone options ⓘ

A resource group is a collection of related resources for an Azure subscription.

Name \*

lama3-finetune ✓

OK Cancel

< Previous | Next : Disks > | Review + create

[Give feedback](#)

### Resource group is important for cost management:

- Not only the compute resources for running the model, but also various other resources such as public IP addresses and storages are associated with this.
- **If you want to completely stop billing, the easiest way is to delete the resource group.**
- It's recommended to organize your resources into separate **resource groups** that can be safely deleted when they are no longer needed.



Home > Virtual machines >

# Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

## Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription \* ⓘ 1923306880-YamakataTraining

Resource group \* ⓘ (New) llama3-finetune

## Instance details

Virtual machine name \* ⓘ llama3-vm ✓

Region \* ⓘ (US) East US 2

Availability options ⓘ No infrastructure redundancy required

Security type ⓘ Standard

# Create a virtual machine

Help me create a low cost VM | Help me create a VM optimized for high availability | Help me choose the right VM size for my workload

Availability options  No infrastructure redundancy required

Security type  Standard  
**i** Trusted launch virtual machine is required when using 1P Gallery images.

Image \*  Ubuntu Server 24.04 LTS - x64 Gen2  
[See all images](#) | [Configure VM generation](#)

**i** This image is compatible with additional security features. [Click here to swap to the Trusted launch security type.](#)

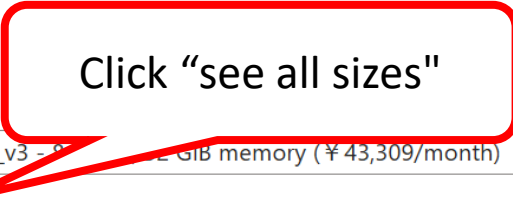
VM architecture  Arm64  x64

Run with Azure Spot discount

Size \*  Standard\_D8s\_v3 - 8 vCPUs, 32 GiB memory (¥43,309/month)  
[See all sizes](#)

Enable Hibernation   
**i** Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernation to enable this feature. [Learn more](#)

## Administrator account



Home > Virtual machines > Create a virtual machine >

# Select a VM size

Search for "A100" ✕

✕ vCPUs : All RAM (GiB) : All Display cost : Monthly + Add filter

Showing 4 of 945 VM sizes. | Subscription: 1923306880-YamakataTraining | Region: East US 2 | Current size: Standard\_D8s\_v3 | Image: Ubuntu Server 24.04 LTS | [Learn more about VM sizes](#) Group by series

VM size	Type	vCPUs	RAM (GiB)	Data disks	Max IOPS	Local storage (G)
> Size not available						
See the info bubble next to a size for details on availability						
> Insufficient quota - family limit						
Family vCPUs are insufficient to deploy these sizes						

# Select a VM size

A100 | Display cost: Monthly | vCPUs: All | RAM (GiB): All | Add filter

Showing 4 of 1013 VM sizes. | Subscription: 1923306880-YamakataTraining | Region: East US | Current size: Standard\_D2s\_v3 | Image: Ubuntu Server 24.04 LTS | Learn more about VM sizes | Group by series

VM Size ↑↓ | Type ↑↓ | vCPUs ↑↓ | RAM (GiB) ↑↓ | Data disks ↑↓ | Max IOPS ↑↓ | Local storage (GB) ↑↓

VM Size	Type	vCPUs	RAM (GiB)	Data disks	Max IOPS	Local storage (GB)
Size not available	See the info bubble next to a size for details on availability					
NC24ads_A100_v4 <a href="#">Request quota</a>	GPU	24	220		30000	894 (NVMe)
NC48ads_A100_v4 <a href="#">Request quota</a>	GPU	48	440		60000	1788 (NVMe)
NC96ads_A100_v4 <a href="#">Request quota</a>	GPU	96	880		120000	3576 (NVMe)
ND96amsr_A100_v4 <a href="#">Request quota</a>	GPU	96	880		80000	7153 (NVMe)

Click "Request quota"

# 2.1 Request a quota

Approval is required for high-cost resources

# What is a Quota Request?

When you want to use **expensive resources** like **GPUs** or a **large number of CPUs**, you need **approval from Azure**.

## Why is this required?

- To prevent users from **accidentally using excessive resources**, which could lead to **unexpected high charges**
- To ensure **fair resource distribution** so that some users don't monopolize specific resources
- To **balance server loads** and prevent resource congestion in certain regions

# Select a VM size

A100 | Display cost: Monthly | vCPUs: All | RAM (GiB): All | Add filter

Showing 4 of 1013 VM sizes. | Subscription: 1923306880-YamakataTraining | Region: East US | Current size: Standard\_D2s\_v3 | Image: Ubuntu Server 24.04 LTS | Learn more about VM sizes | Group by series

VM Size ↑↓ | Type ↑↓ | vCPUs ↑↓ | RAM (GiB) ↑↓ | Data disks ↑↓ | Max IOPS ↑↓ | Local storage (GB) ↑↓

VM Size	Type	vCPUs	RAM (GiB)	Data disks	Max IOPS	Local storage (GB)
Size not available						
NC24ads_A100_v4	GPU	24	220		30000	894 (NVMe)
NC48ads_A100_v4	GPU	48	440		60000	1788 (NVMe)
NC96ads_A100_v4	GPU	96	880		120000	3576 (NVMe)
ND96amsr_A100_v4	GPU	96	880		80000	7153 (NVMe)

Size not available

- NC24ads\_A100\_v4 [Request quota](#) GPU
- NC48ads\_A100\_v4 [Request quota](#) GPU
- NC96ads\_A100\_v4 [Request quota](#) GPU
- ND96amsr\_A100\_v4 [Request quota](#) GPU

Click "Request quota"

Home > Virtual machines > Create a virtual machine >

## Select a VM size

A100 | vCPUs : All | RAM (GiB) : All | Display cost : Monthly

Showing 4 of 945 VM sizes. | Subscription: 1923306880-YamakataTraining | Region: East US 2 | Current size: Standard\_NC24ads\_A100\_v4

VM Size ↑↓	Type ↑↓	vCPUs ↑↓
Size not available		See the info bubble next to a size f
ND96amsr_A100_v4 ⓘ Request quota	GPU	96
Insufficient quota - family limit		Family vCPUs are insufficient to de
NC24ads_A100_v4 ⓘ Request quota	GPU	24
NC48ads_A100_v4 ⓘ Request quota	GPU	48
NC96ads_A100_v4 ⓘ Request quota	GPU	96

## New Quota Request

Enter a new limit for the following 1 quota.

**1923306880-YamakataTraining**

### East US 2

Quota	Usage	New limit
Standard NCADS_A100_v4 Family vCPUs	0 of 0	<input type="text" value="24"/>

- See also**
- [VM-series vCPU quotas](#)
  - [Total regional vCPU quotas](#)
  - [Spot vCPU quotas](#)

Clicking Submit button will register Microsoft.Capacity to your subscription if required. [Learn more.](#)

Select | Prices presented are estimates in JPY that include only Azure infrastructure costs and any applicable software costs. Final charges will appear in your local currency in cost ana | **Submit** | Cancel



Home > Virtual machines > Create a virtual machine >

# Select a VM size

A100 vCPUs : All RAM (GiB) : All Display cost : Monthly

Showing 4 of 945 VM sizes. Subscription: 1923306880-YamakataTraining Region: East US 2 Current size: Standard\_NC24ads\_A100\_v4

VM Size ↑↓	Type ↑↓	vCPUs ↑↓
Size not available See the info bubble next to a size f		
ND96amsr_A100_v4 ⓘ Request quota	GPU	96
Insufficient quota - family limit Family vCPUs are insufficient to de		
NC24ads_A100_v4 ⓘ Request quota	GPU	24
NC48ads_A100_v4 ⓘ Request quota	GPU	48
NC96ads_A100_v4 ⓘ Request quota	GPU	96

Select Prices presented are estimates in JPY that include only Azure infrastructure costs and any any applicable software costs. Final charges will appear in your local currency in cost anal

## New Quota Request

**We are reviewing your request to adjust the quota.**

Please wait a few minutes while we review your request to adjust the Standard NCADS\_A100\_v4 Family vCPUs quota to 24 in the East US 2 region. If you close the Quota Details blade, you will not see a status update for your request, but can check it in the Azure Activity Log.

We are reviewing your request to adjust 1 quotas.

**1923306880-YamakataTraining**

	Received (vCPU)	New limit (vCPU)
<b>East US 2</b>		
Standard NCADS_A100_v4 Family vCPUs	0 of 24	24

## Select a VM size

A100 | vCPUs: All | RAM (GiB): All | Display cost: Monthly

Showing 4 of 945 VM sizes. | Subscription: 1923306880-YamakataTraining | Region: East US 2 | Current size: Standard\_NC24ads\_A100\_v4

VM Size	Type	vCPUs
Size not available		See the info bubble next to a size f
ND96amsr_A100_v4	GPU	96
Insufficient quota - family limit		Family vCPUs are insufficient to de
NC24ads_A100_v4	GPU	24
NC48ads_A100_v4	GPU	48
NC96ads_A100_v4	GPU	96

Select | Prices presented are estimates in JPY that include only Azure infrastructure costs and any any applicable software costs. Final charges will appear in your local currency in cost anal

## New Quota Request

Successful 0 | Partial increase 0 | Unsuccessful 1

**Approval may be granted immediately, but it can also be denied.**

East US 2  
Standard NCADS\_A100\_v4 Family vCPUs 0 of 24 24

To follow up on quota increase requests, contact the support team.

Create a support request

Home > Virtual machines > Create a virtual machine >

## Select a VM size

A100

vCPUs: All

Showing 4 of 945 VM sizes.

Subscription: 1923306880-YamakataTraining

Region

VM Size ↑↓

Type ↑↓

### Size not available

ND96amsr\_A100\_v4 Request quota GPU

### Insufficient quota - family limit

NC24ads\_A100\_v4 Request quota GPU

NC48ads\_A100\_v4 Request quota GPU

NC96ads\_A100\_v4 Request quota GPU

Select

Prices presented are estimates in JPY that any applicable software costs. Final charge

## Request details

Select the resource deployment model and request types for this quota request.

Deployment model \*

Resource Manager

Choose request types \*

- Increase quota / expand access region
- Zone access

### Request details

Select one or more locations, set your quotas, and complete the usage details for your request. Confirmation of quota change will be sent when all region requests are approved.

Locations \*

(US) East US 2

### (US) East US 2

Quotas \*

NC A100 v4 Series

Quota

Usage

New limit

#### Available to increase (1)

NC A100 v4 Series

0 of 0

24

Save and Continue

[Learn about Compute \(cores/vCPUs\) quota increase requests](#)

# Select a VM size

A100 | vCPUs: All | RAM (GiB): All | Display cost: Monthly | Add filter

Showing 4 of 945 VM sizes. | Subscription: 1923306880-YamakataTraining | Region: East US 2 | Current size: Standard\_NC24ads\_A100\_v4 | Image: Ubuntu Server 24.04 LTS

VM Size ↑↓	Type ↑↓	vCPUs ↑↓	RAM (GiB) ↑↓
Size not available		See the info bubble next to a size for details on availability	
ND96amsr_A100_v4 ⓘ Request quota	GPU	96	1800
Insufficient quota - family limit		Family vCPUs are insufficient to deploy these sizes	
NC24ads_A100_v4 ⓘ Request quota	GPU	24	220
NC48ads_A100_v4 ⓘ Request quota	GPU	48	440
NC96ads_A100_v4 ⓘ Request quota	GPU		

Choose "Yes (Recommended)" in the "Advanced diagnostic information"

## New support request

2. Recommended solution | 3. Additional details

### Tell us a little more information.

Providing detailed, accurate information helps us resolve your issue faster.

### Problem details

Additional information is required to promptly process your request for a quota increase.

Request details

1 request | Update details

Request Summary	New Limit
Resource Manager, EASTUS2, NC A100 v4 Series	24

### Advanced diagnostic information

To enable faster resolution, we recommend allowing Microsoft support to access your Azure resources to collect advanced diagnostic information. Access is read-only and is removed...

Previous | Next

Select | Prices presented are estimates in JPY that include only Azure infrastructure costs and any discounts for the subscription. Final charges will appear in your local currency in cost analysis and billing views. View

Home > Virtual machines > Create a virtual machine >

# Select a VM size

A100 vCPUs: All RAM (GiB): All Display cost: Monthly Add filter

Showing 4 of 945 VM sizes. Subscription: 1923306880-YamakataTraining Region: East US 2 Current size: Standard\_NC24ads\_A100\_v4 Image: Ubuntu Server 24.04 LTS

VM Size	Type	vCPUs	RAM (GiB)
Size not available		See the info bubble next to a size for details on availability	
ND96amsr_A100_v4	GPU	96	1800
Insufficient quota - family limit		Family vCPUs are insufficient to deploy these sizes	
NC24ads_A100_v4	GPU	24	220
NC48ads_A100_v4	GPU	48	440
NC96ads_A100_v4	GPU	96	880

## New support request

### Support method

Support plan  
Basic support

Severity  
C - Minimal impact

- Preferred contact method \*
- Email**  
A Support engineer will contact you over email.
  - Phone**  
A Support engineer will contact you over the phone.

Your availability  
Business Hours

Support language \*  
English

### Contact info

Contact name

Previous **Next**

Select Prices presented are estimates in JPY that include only Azure infrastructure costs and any discounts for the subscription. Final charges will appear in your local currency in cost analysis and billing views.

Home > Virtual machines > Create a virtual machine >

# Select a VM size

vCPUs : All
RAM (GiB) : All
Display cost : Monthly
+ Add filter

Showing 4 of 945 VM sizes. | 
 Subscription: 1923306880-YamakataTraining | 
 Region: East US 2 | 
 Current size: Standard\_NC24ads\_A100\_v4 | 
 Image: Ubuntu Server 24.04 LTS

VM Size ↑↓	Type ↑↓	vCPUs ↑↓	RAM (GiB) ↑↓
Size not available		See the info bubble next to a size for details on availability	
ND96amsr_A100_v4 <a href="#">Request quota</a>	GPU	96	1800
Insufficient quota - family limit		Family vCPUs are insufficient to deploy these sizes	
NC24ads_A100_v4 <a href="#">Request quota</a>	GPU	24	220
NC48ads_A100_v4 <a href="#">Request quota</a>	GPU	48	440
NC96ads_A100_v4 <a href="#">Request quota</a>	GPU	96	880

Prices presented are estimates in JPY that include only Azure infrastructure costs and any discounts for the subscrip... any applicable software costs. Final charges will appear in your local currency in cost analysis and billing views. [View](#)

## New support request

3. Additional details | 
 4. Review + create

Review the information you provided before creating your support request.

### Basics

Issue type	Service and subscription limits (quotas)
Subscription	1923306880-YamakataTraining (a600356d-63a3-483e-b4bb-59629c01a212)
Quota type	Compute-VM (cores-vCPUs) subscription limit increases

### Terms, conditions, and privacy policy

By clicking "Create" you accept the [terms and conditions](#).  
 View our [privacy policy](#).

### Details

[Give feedback](#)

# Quota approval is notified by email

Case [redacted] quota increase requ... - [icons]  
TrackingID# [redacted] 07298 受信トレイ x

Microsoft Support <support@mail.support.microsoft.com>  
To yamakata.yoko@mail.u-tokyo.ac.jp

0:19 (0 分前) ☆ ⏪ ⋮

- I received a reply two hours later, but it was in the spam folder, so I didn't notice it for a while...
- The support team informed me that "East US2" has limited SKU availability, and they requested that I either switch to the "West US" region or use an H100 instead.

To yamakata.yoko@mail.u-tokyo.ac.jp, support@...

このメールにはご注意ください  
このメッセージは送信者に承認されていないため、  
ら送信されたものであることを確認できません。メールに含まれるリンクのクリックや添付ファイル  
のダウンロード、また返信に個人情報を記載することは避けてください。  
安全なメール

日本語に翻訳 x

"Please do not alter the subject line and reply all to ensure the email is tracked and  
request."

Hello Yoko,

Thank you for contacting Microsoft Support. My name is Mounica B. I am the Support  
will be working with you on this Service Request. You may reach me using the contact  
listed below, referencing the SR number: 2504100030000960.

This is with reference to Compute quota increase request for NC A100 v4 Series in  
US 2 region for the Subscription ID: a600356d-63a3-483e-b4bb-59629c01a212.

The NC A100 v4-series SKUs are a specialty SKU with a smaller footprint of availability  
Could you please use alternate region as West US for NC A100 v4 Series SKU or a  
H100v5 series in US East2? Also, please let us know what is your expected usage,

RE: [EXTERNAL] Re: Quota request for Compute-VM... - [icons]  
TrackingID#2504100030000960 外部 受信トレイ x

Mounica B 11:10 (1 時間前) ☆ ⏪ ⋮  
To 自分, support@mail.support.microsoft.com, yamakata.yoko@mail.u-tokyo.ac.jp, v-mounicab@microsoft.com

日本語に翻訳 x

Hello Yoko,

Thank you for your response!

I am happy to inform you that compute quota increase request for NC A100 v4 Series to limit 24 cores  
in West US region has been successfully completed.

Kindly verify and let me know if you need any further assistance regarding the changes.

Awa

After I requested the change to "West US", I received a reply the next day saying it had been approved.

Having trouble viewing this email?  
Microsoft  
Your quota increase request was successfully submitted to your support plan.

Please note: First time is based on Severity and if the case is "Severity A" response cases are always 24x7, "Severity B" cases are always 24x7, and "Severity C" cases are business hours, optionally 24x7, and "Severity D" cases are business hours, more about support response times.

Please keep in mind: [microsoftsupport.com](https://microsoftsupport.com) and [microsoftsupport@microsoft.com](mailto:microsoftsupport@microsoft.com) are the only valid email domains used for communications related to your request.

Incident title: コンピューティング  
サブスクリプション  
データ  
Support request: 250413000



# Create a virtual machine

Help me create a low cost VM | Help me create a VM optimized for high availability | Help me choose the right VM size for my workload

## Instance details

Virtual machine name \*

Region \*

Availability options

Security type

Image \*

**Do the same things but specify "West US" as region.**

[See all images](#) | [Configure VM generation](#)

This image is compatible with additional security features. [Click here to swap to the Trusted launch security type.](#)

VM architecture  Arm64  
 x64

Run with Azure Spot discount

Size \*

[See all sizes](#)



# Select a VM size

A100 | vCPUs: All | RAM (GiB): All | Display cost: Monthly | Add filter

Showing 3 of 861 VM sizes. | Subscription: 1923306880-YamakataTraining | Region: West US | Current size: Standard\_NC24ads\_A100\_v4 | Image: Ubuntu Server 24.04 LTS | [Learn more about VM sizes](#) | Group by series

VM Size ↑↓	Type ↑↓	vCPUs ↑↓	RAM (GiB) ↑↓	Data disks ↑↓	Max IOPS ↑↓	Local storage (G)
Other sizes						
NC24ads_A100_v4	GPU	24	220	8	30000	894 (NVMe)
Insufficient quota - fam... Family vCPUs are insufficient to deploy these sizes						

Now I can choose this!

## 2.2 Create a VM using the approved resources

Start a NC\_A100\_v4-sized virtual machine consisting of one GPU card (NVIDIA A100) and 24 vCPUs

# Select a VM size

A100 | vCPUs: All | RAM (GiB): All | Display cost: Monthly | Add filter

Showing 3 of 861 VM sizes. | Subscription: 1923306880-YamakataTraining | Region: West US | Current size: Standard\_NC24ads\_A100\_v4 | Image: Ubuntu Server 24.04 LTS | [Learn more about VM sizes](#) | Group by series

VM Size ↑↓	Type ↑↓	vCPUs ↑↓	RAM (GiB) ↑↓	Data disks ↑↓	Max IOPS ↑↓	Local storage (G)
Other sizes						
<b>NC24ads_A100_v4</b>	GPU	24	220	8	30000	894 (NVMe)
Insufficient quota - family limit						
Family vCPUs are insufficient to deploy these sizes						

• The hourly usage fee is listed in the rightmost column.  
• This resource costs ¥538.285/h.

**Select**

Prices presented are estimates in JPY that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. Final charges will appear in your local currency in cost analysis and billing views. [View Azure pricing calculator.](#)

[Give feedback](#)

# Create a virtual machine

Help me create a low cost VM | Help me create a VM optimized for high availability | Help me choose the right VM size for my workload

Image \*

VM architecture  Arm64  x64

Run with Azure Spot discount

Size \*  (¥ 538,285/month)

Enable Hibernation

Administrator account Authentication type  SSH public  Password

If you want to apply the Spot discount, check this box.

- You can get up to 90% off, but the instance may be frequently deleted (stopped).
- Therefore, your implementation must assume this behavior — for example, in deep learning, make sure to save a checkpoint at the end of each epoch.

# Create a virtual machine

Help me create a low cost VM | Help me create a VM optimized for high availability | Help me choose the right VM size for my workload

Basics | **Disks** | Networking | Management | Monitoring | Advanced | Tags | Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

### VM disk encryption

Azure disk storage encryption automatically encrypts your data stored in the cloud. The default is to encrypt the data when persisting it to the cloud.

Encryption at host

Encryption at host

In Azure, the OS disk should be kept to the minimum size required to run the OS, while applications, logs, and data should be saved to a file share.

### OS disk

OS disk size

OS disk type \*

Delete with VM

Key management

Enable Ultra Disk compatibility

< Previous | **Next : Networking >** | Review + create

Give feedback

# Create a virtual machine

- Help me create a low cost VM
- Help me create a VM optimized for high availability
- Help me choose the right VM size for my workload

- Basics
- Disks
- Networking**
- Management
- Monitoring
- Advanced
- Tags
- Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. [Learn more](#)

## Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network *	(new) llama3-vm-vnet
	<a href="#">Create new</a>
Subnet *	(new) default (10.0.0.0/24)
Public IP	(new) llama3-vm-ip
	<a href="#">Create new</a>
NIC network security group	<input type="radio"/> None
	<input checked="" type="radio"/> Basic
	<input type="radio"/> Advanced
Public inbound ports *	<input type="radio"/> None
	<input checked="" type="radio"/> Allow selected ports

# Create a virtual machine

Validation passed

Help me create a low cost VM | Help me create a VM optimized for high availability | Help me choose the right VM size for my workload

Basics | Disks | Networking | Management | Monitoring | Advanced | Tags | **Review + create**

Price

1 X Standard NC24ads A100 v4 by Microsoft

**737.3770 JPY/hr**

Subscription credits apply

[Terms of use](#) | [Privacy policy](#)

[Pricing for other VM sizes](#)

**Check the price**

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

Name: 洋子 山肩

Preferred e-mail address: 1923306880@utac.u-tokyo.ac.jp

# Create a virtual machine

Validation passed

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose a VM

Basics Disks Networking Management Monitoring Advanced Tags Review + create

## Price

1 X Standard NC24ads A100 v4  
by Microsoft  
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply  
**737.3770 JPY/hr**  
[Pricing for other VM sizes](#)

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Name

Preferred e-mail address

< Previous Next > **Create**

[Download a template for automation](#) [Give feedback](#)

### Generate new key pair

**i** An SSH key pair contains both a public key and a private key. **Azure doesn't store the private key.** After the SSH key resource is created, you won't be able to download the private key again. [Learn more](#)

**Download private key and create resource**

Return to create a virtual machine

- A private key file named "[VM name]\_key.pem" will be downloaded.
- Save it to a location like "C:¥Users¥{YourUsername}¥.ssh¥" for example.



# Home > CreateVm-canonical.ubuntu-24\_04-lts-server-20250411125704 | Overview

Deployment

Search [ ] x << Delete Cancel Redeploy Download Refresh

- Overview
- Inputs
- Outputs
- Template

## Deployment is in progress

Deployment name: CreateVm-canonical.ubuntu-24... Start time: 4/11/2025, 1:15:53 PM  
Subscription: 1923306880-YamakataTraining Correlation ID: 632f3ab8-fca2-48d7-ab9l  
Resource group: llama3-finetune

### Deployment details

Resource	Type	Status	Operation detail:
llama3-vm338	Microsoft.Network/net...	Created	<a href="#">Operation details</a>
llama3-vm-vnet	Microsoft.Network/virt...	OK	<a href="#">Operation details</a>
llama3-vm-ip	Microsoft.Network/pu...	OK	<a href="#">Operation details</a>
llama3-vm-nsg	Microsoft.Network/net...	OK	<a href="#">Operation details</a>

Give feedback  
[Tell us about your experience with deployment](#)

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# Home > CreateVm-canonical.ubuntu-24\_04-lts-server-20250411125704 | Overview

Deployment

Search [ ] x << Delete Cancel Redeploy Download Refresh

- Overview
- Inputs
- Outputs
- Template

**✓ Your deployment is complete**

Deployment name: CreateVm-canonical.ubuntu-24... Start time: 4/11/2025, 1:15:53 PM  
Subscription: 1923306880-YamakataTraining Correlation ID: 632f3ab8-fca2-48d7-ab9l  
Resource group: llama3-finetune

- Deployment details
  - Next steps
    - Setup auto-shutdown Recommended
    - Monitor VM health, performance and network dependencies Recommended
    - Run a script inside the virtual machine Recommended
- Go to resource** Create another VM

Give feedback  
Tell us about your experience with deployment

**✓ Deployment succeeded**

Deployment 'CreateVm-canonical.ubuntu-24\_04-lts-server-20250411125704' to resource group 'llama3-finetune' was successful.

Go to resource Pin to dashboard

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Set up cost alerts >

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Find an Azure expert >

Home > CreateVm-canonical.ubuntu-24\_04-lts-server-20250411125704 | Overview >

# llama3-vm

Virtual machine

Search Help me copy this VM in any region

Overview Connect Start Restart Stop Hibernate Capture Delete Refresh Open in mobile

- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Resource visualizer
- Connect
- Networking
- Settings
- Availability + scale
- Security
- Backup + disaster recovery
- Operations
- Monitoring
- Automation
- Help

### Essentials

Resource group ([move](#))  
[llama3-finetune](#)

Status  
 Running

Location  
 West US

Subscription ([move](#))  
[1923306880-YamakataTraining](#)

Subscription ID  
 a600356d-63a3-483e-b4bb-59629c01a212

Tags ([edit](#))  
[Add tags](#)

Operating system  
 Linux (ubuntu 24.04)

Size  
 Standard NC24ads A100 v4 (24 vcpus, 220 GiB memory)

Public IP address  
[13.91.254.36](#)

Virtual network/s  
[llama3-vm-vnet](#)

DNS name  
[Not configured](#)

Health state  
 -

Time created  
 4/11/2025, 4:16 AM UTC

Log in with this IP address

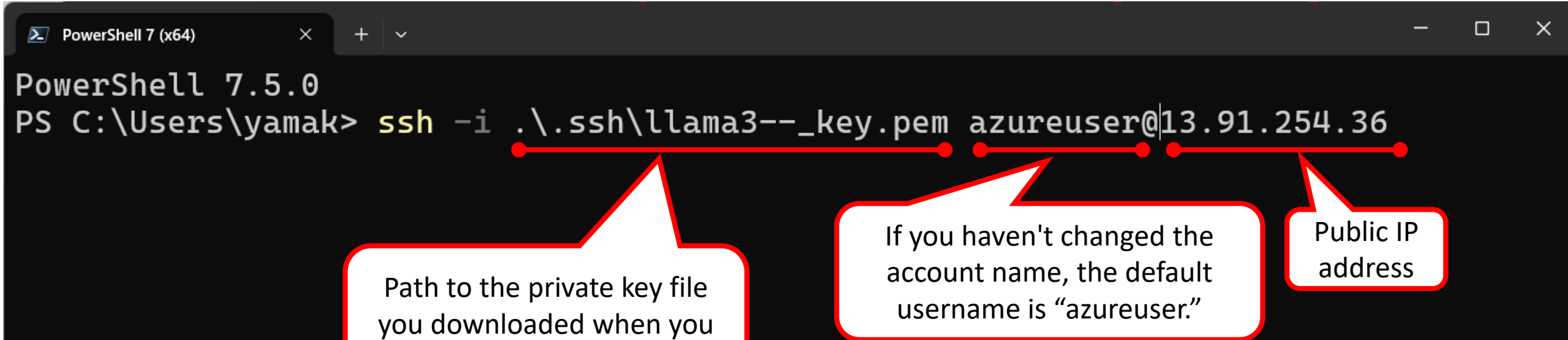
Properties Monitoring Capabilities (7) Recommendations Tutorials

# 3. Log in to the VM from your local computer

PowerShell for Windows and Terminal for MacOS.

# Windows PowerShellでログイン

```
ssh -i .\ssh\[virtual machine name]_key.pem azureuser@[public IP address]
```

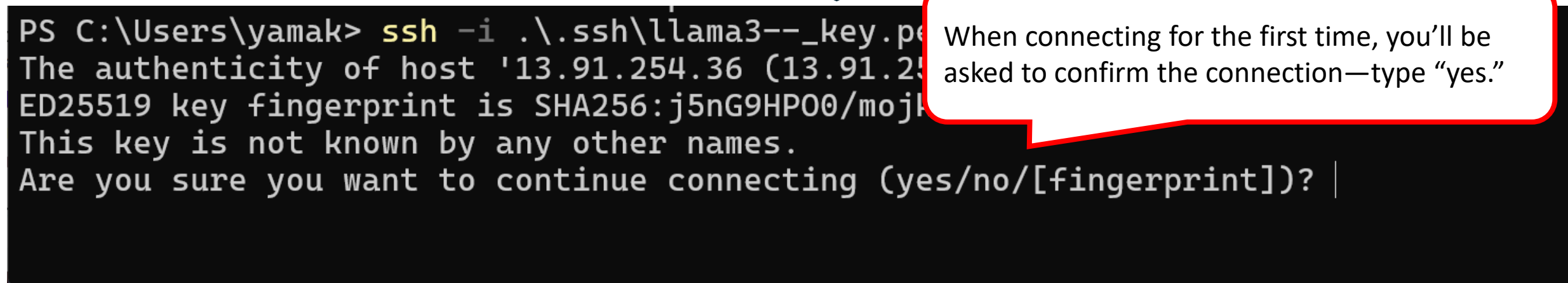


```
PowerShell 7 (x64)
PowerShell 7.5.0
PS C:\Users\yamak> ssh -i .\ssh\llama3--_key.pem azureuser@13.91.254.36
```

Path to the private key file you downloaded when you created the VM.

If you haven't changed the account name, the default username is "azureuser."

Public IP address



```
PS C:\Users\yamak> ssh -i .\ssh\llama3--_key.pem azureuser@13.91.254.36
The authenticity of host '13.91.254.36 (13.91.254.36)' can't be established.
ED25519 key fingerprint is SHA256:j5nG9HP00/mojk...
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? |
```

When connecting for the first time, you'll be asked to confirm the connection—type "yes."

just raised the bar for easy, resilient and secure K8s cluster deployment.

<https://ubuntu.com/engage/secure-kubernetes-at-the-edge>

Expanded Security Maintenance for Applications is not enabled.

55 updates can be applied immediately.

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@llama3-vm:~\$ |

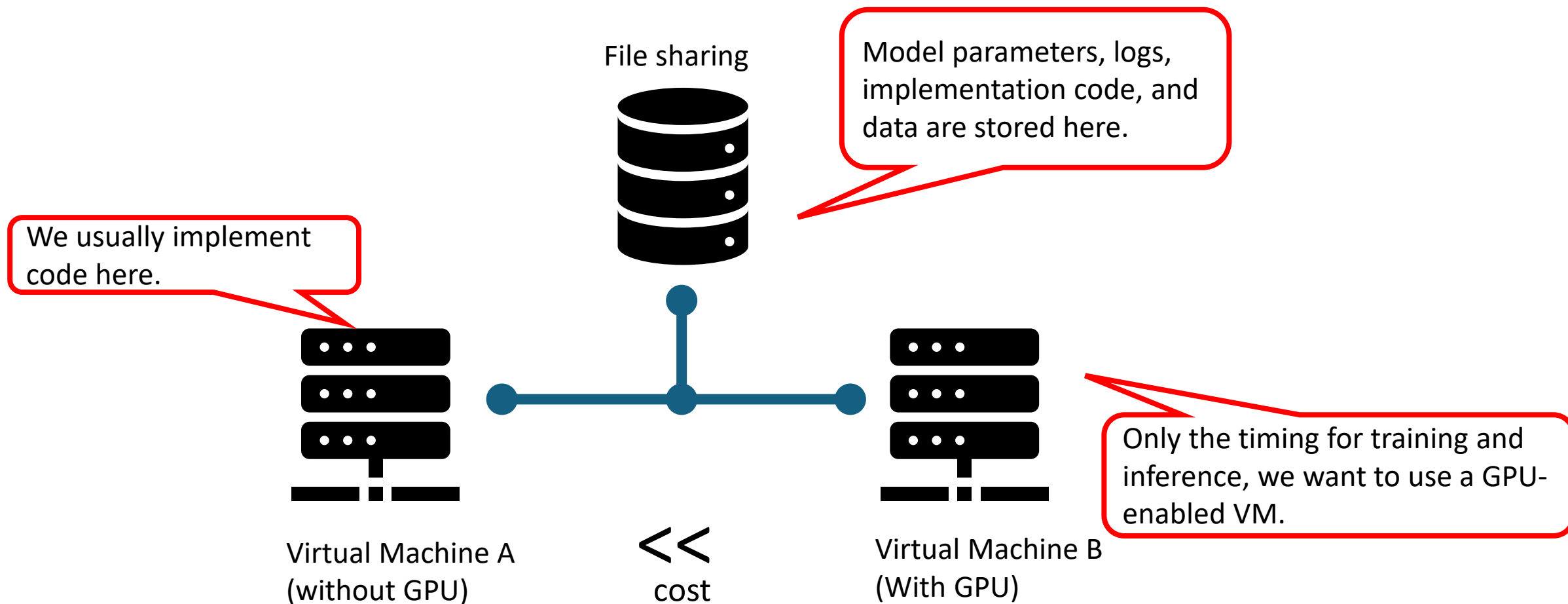
Remote login  
succeeded!

# 4. Share files across multiple virtual machines

[Tutorial: Create an NFS Azure file share and mount it on a Linux VM using the Azure portal](#)

# Benefits of Sharing Files Across Multiple VMs

- **GPU-enabled VMs are expensive** – do you really need a GPU all the time?
- You may want to **develop and test your code on a CPU-only VM**, and use a **GPU-enabled VM only when training or running inference**.
- This approach helps reduce costs while maintaining flexibility.





# 4.1 Create a storage account

[Azure tutorial: Create an NFS Azure file share and mount it on a Linux VM using the Azure portal](#)

### Azure services

[Create a resource](#)

Virtual machines

### Resources

Recent Favorite

Name
<a href="#">ML-workspace</a>
<a href="#">(new)ML-test</a>
<a href="#">openai_test1</a>
<a href="#">1923306880-YamakataTraining</a>

[See all](#)

### Navigate

[Subscriptions](#)

### Tools

Storage

All Services (19) Marketplace (31) More (4)

Services [See more](#)

- Storage accounts**
- Storage browser
- Storage movers
- Storage accounts (classic)

**Storage Accounts**

Marketplace [See more](#)

- Storage account
- Backup and Site Recovery
- Azure Storage solution for Sentinel
- Blob Storage Digests Backed by Confidential Ledger

Documentation [See more](#)

- [Azure Storage Documentation Hub](#)
- [Access control model for Azure Data Lake Storage - Azure Storage](#)
- [Choose an Azure storage service - Azure Architecture Center](#)
- [Upgrade to a general-purpose v2 storage account - Azure Storage](#)

[Continue searching in Microsoft Entra ID](#)

Searching all subscriptions. [Give feedback](#)

[Azure AI services](#) [Kubernetes services](#) [More services](#)

### Last Viewed

5 days ago
5 days ago
a week ago
a week ago

[Dashboard](#)

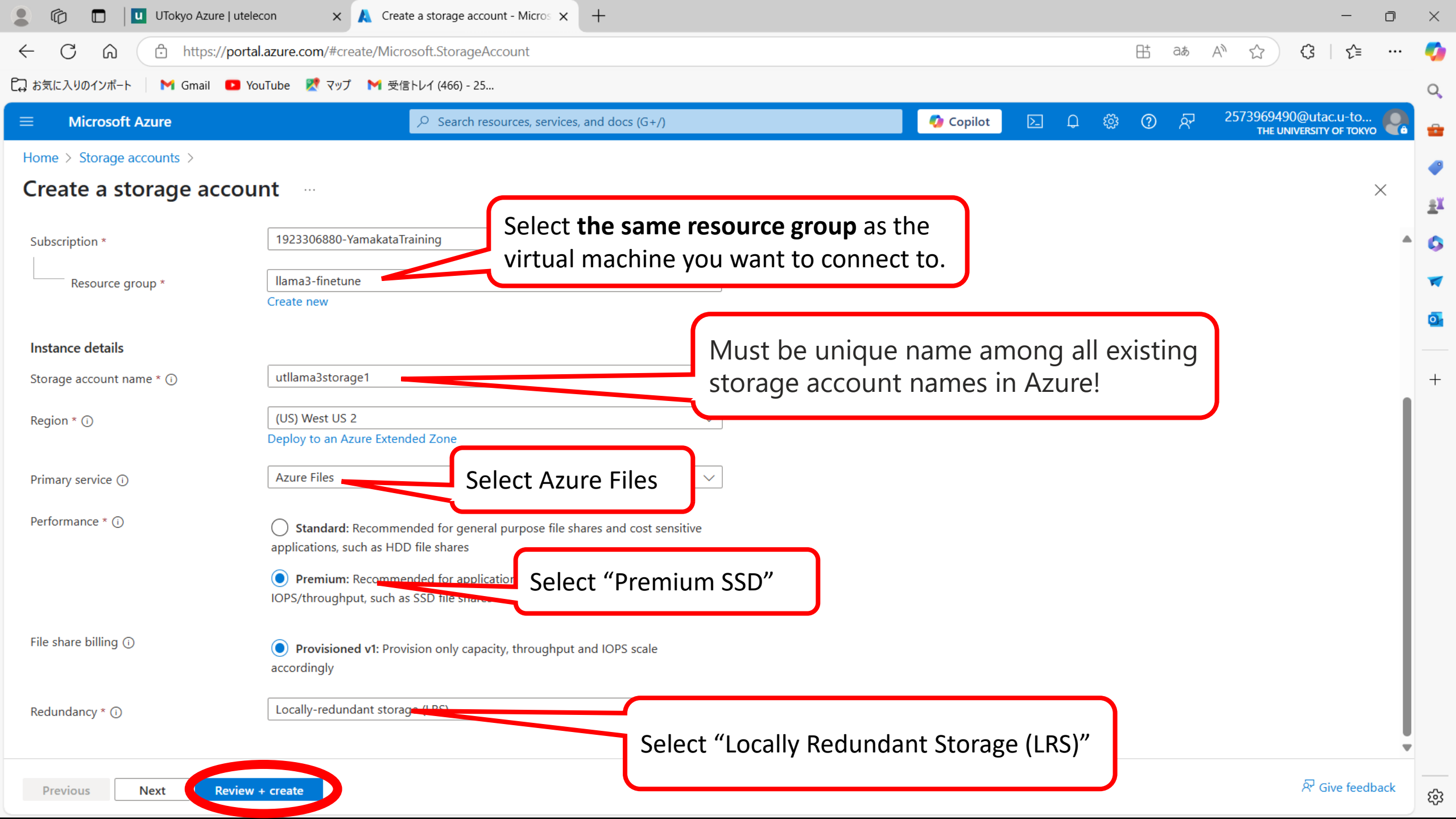
# Storage accounts

**+ Create** Restore Manage view Refresh Export to CSV Open query Assign tags Delete

Filter for any field... Subscription equals all Resource group equals all Location equals all Add filter

Showing 1 to 3 of 3 records.

Name	Type	Kind	Resource group	Location	Subscription
aifoundrytest0721503877	Storage account	StorageV2	openai_test1	East US	1923306880-YamakataTraining
aifoundrytest6713422946	Storage account	StorageV2	AI-Foundary-hub0	East US 2	1923306880-YamakataTraining
mlworkspace5877508646	Storage account	StorageV2	(new)ML-test	East US	1923306880-YamakataTraining



Select the same resource group as the virtual machine you want to connect to.

Must be unique name among all existing storage account names in Azure!

Select Azure Files

Select "Premium SSD"

Select "Locally Redundant Storage (LRS)"

Review + create

Home > Storage accounts >

# Create a storage account

- Basics
- Advanced
- Networking
- Data protection
- Encryption
- Tags
- Review + create**

[View automation template](#)

## Basics

Subscription	1923306880-YamakataTraining
Resource group	llama3-finetune
Location	West US 2
Storage account name	utllama3storage1
Primary service	Azure Files
Performance	Premium
Premium account type	File shares
File share billing	Provisioned v1
Replication	Locally-redundant storage (LRS)

## Advanced

Enable hierarchical namespace	Disabled
Enable SFTP	Disabled
Enable network file system v3	Disabled
Allow cross-tenant replication	Disabled

Previous Next **Create**

[Give feedback](#)

Home >

# utllama3storage1\_1744519855395 | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

- Overview
- Inputs
- Outputs
- Template

## Deployment is in progress

Deployment name: utllama3storage1\_1744519855395  
 Subscription: [1923306880-YamakataTraining](#)  
 Resource group: [llama3-finetune](#)

Start time: 4/13/2025, 1:51:30 PM  
 Correlation ID: 8743d7ac-4b53-4835-909f-a6a81a898b9b

### Deployment details

Resource	Type	Status	Operation details
No results.			

### Give feedback

[Tell us about your experience with deployment](#)



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# utllama3storage1\_1744519855395 | Overview

Deployment

Search Delete Cancel Redeploy Download Refresh

- Overview
- Inputs
- Outputs
- Template

Your deployment is complete

Deployment name: utllama3storage1\_1744519855395  
Subscription: [1923306880-YamakataTraining](#)  
Resource group: [llama3-finetune](#)

Start time: 4/13/2025, 1:51:30 PM  
Correlation ID: 8743d7ac-4b53-4835-909f-a6a81a898b9b

Deployment details

Next steps

[Go to resource](#)

Give feedback

[Tell us about your experience with deployment](#)



### Cost Management

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[Set up cost alerts >](#)



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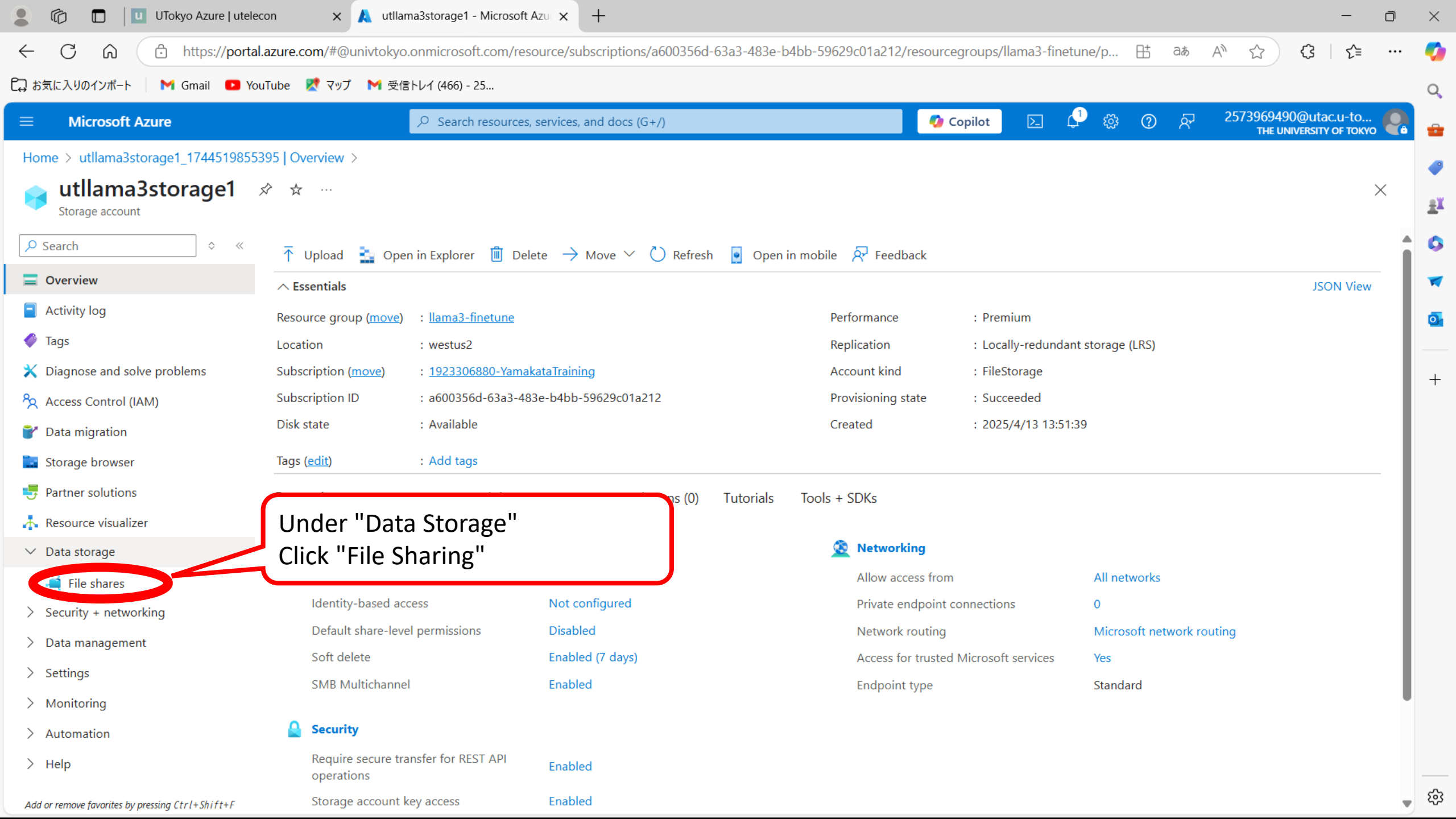
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Under "Data Storage"  
Click "File Sharing"

# utllama3storage1

Storage account

Search

- Upload
- Open in Explorer
- Delete
- Move
- Refresh
- Open in mobile
- Feedback

## Overview

- Activity log
- Tags
- Diagnose and solve problems
- Access Control (IAM)
- Data migration
- Storage browser
- Partner solutions
- Resource visualizer
- Data storage**
  - File shares**
- Security + networking
- Data management
- Settings
- Monitoring
- Automation
- Help

### Essentials

Resource group (move)	: llama3-finetune	Performance	: Premium
Location	: westus2	Replication	: Locally-redundant storage (LRS)
Subscription (move)	: 1923306880-YamakataTraining	Account kind	: FileStorage
Subscription ID	: a600356d-63a3-483e-b4bb-59629c01a212	Provisioning state	: Succeeded
Disk state	: Available	Created	: 2025/4/13 13:51:39
Tags (edit)	: Add tags		

### Networking

Allow access from	All networks
Private endpoint connections	0
Network routing	Microsoft network routing
Access for trusted Microsoft services	Yes
Endpoint type	Standard

Identity-based access	Not configured
Default share-level permissions	Disabled
Soft delete	Enabled (7 days)
SMB Multichannel	Enabled

### Security

Require secure transfer for REST API operations	Enabled
Storage account key access	Enabled



## 4.2 Create a file share

# utllama3storage1 | File shares

Storage account

Search + File share Refresh Give feedback

- Overview
- Activity log
- Tags
- Diagnose and solve problems
- Access Control (IAM)
- Data migration
- Storage browser
- Partner solutions
- Resource visualizer
- Data storage

## File share settings

Identity-based access: **Not configured** Default share-level permissions: **Disabled** Soft delete: **7 days** SMB Multichannel: **Enabled** Security: **Maximum compatibility**

Search file shares by prefix (case-sensitive)   Show deleted shares

Name	Protocol	Provisioned storage
You don't have any file shares yet. Click '+ File share' to get started.		

- File shares**
- > Security + networking
- > Data management
- > Settings
- > Monitoring
- > Automation
- > Help

Home > utllama3storage1\_1744519855395 | Overview > utllama3storage1 | File shares >

# New file share

Basics Backup Review + create

The file share is billed by provisioned share size, regardless of the used capacity. [Learn more](#)

- The minimum share size is 100 GiB.
- Provision more capacity to get more performance.

Name \*

Provisioned storage (GiB) \*   
[Set to maximum](#)

## Performance

Maximum IO/s ⓘ	4024
Burst IO/s ⓘ	10000
Throughput rate ⓘ	203.0 MiB / s
Maximum capacity	100 TiB

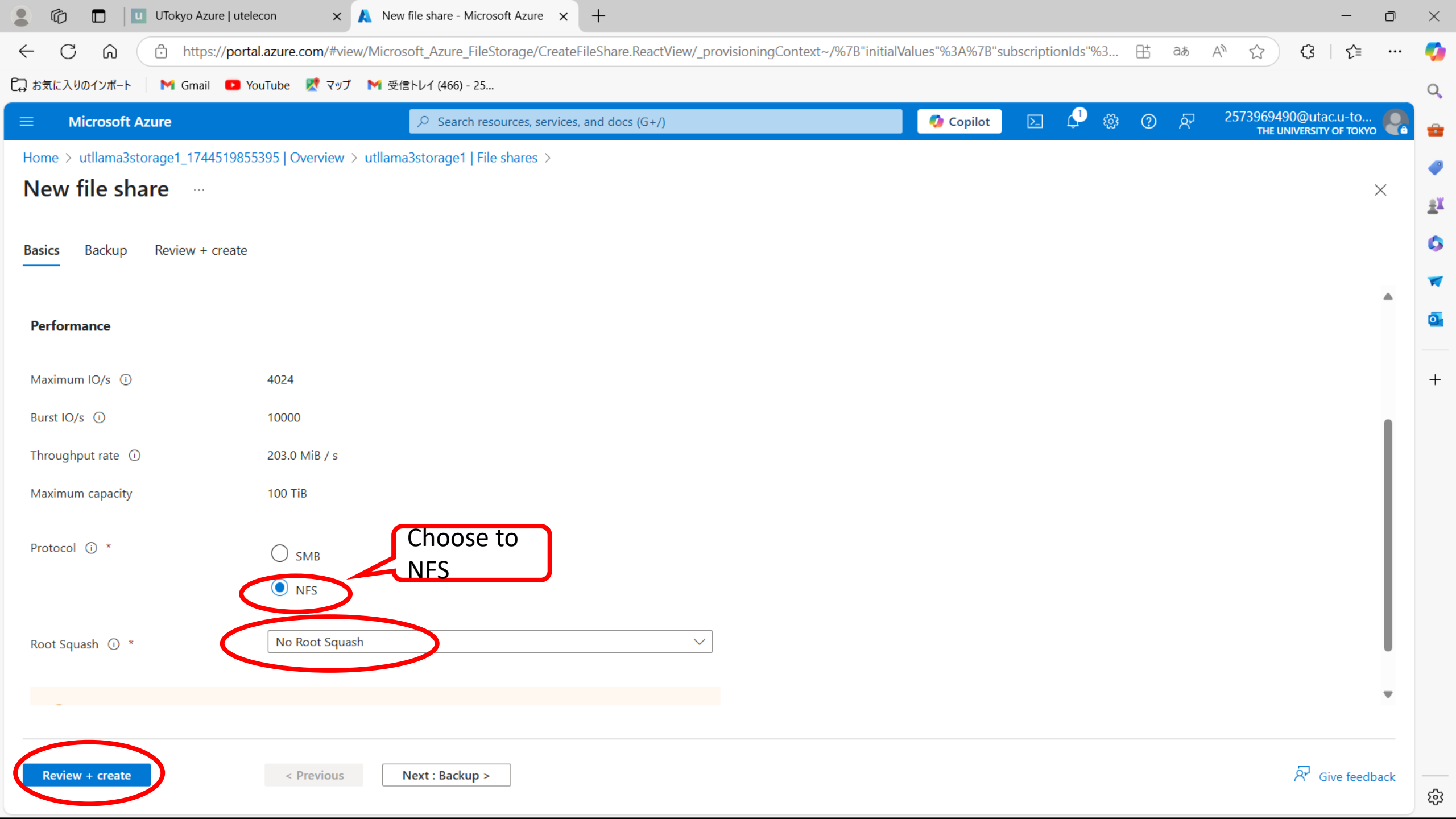


[Review + create](#)

[< Previous](#)

[Next : Backup >](#)

[Give feedback](#)



# New file share

Basics Backup Review + create

## Performance

Maximum IO/s ⓘ	4024
Burst IO/s ⓘ	10000
Throughput rate ⓘ	203.0 MiB / s
Maximum capacity	100 TiB

Protocol ⓘ \*

SMB

NFS

Choose to NFS

Root Squash ⓘ \*

No Root Squash

Review + create

< Previous

Next : Backup >

Give feedback

Home > utllama3storage1\_1744519855395 | Overview > utllama3storage1 | File shares >

# New file share

Validation passed

Basics Backup Review + create

## Basics

File share name	sharedfiles
Access Tier	Premium
Provisioned storage (GiB)	1024
Protocol	NFS

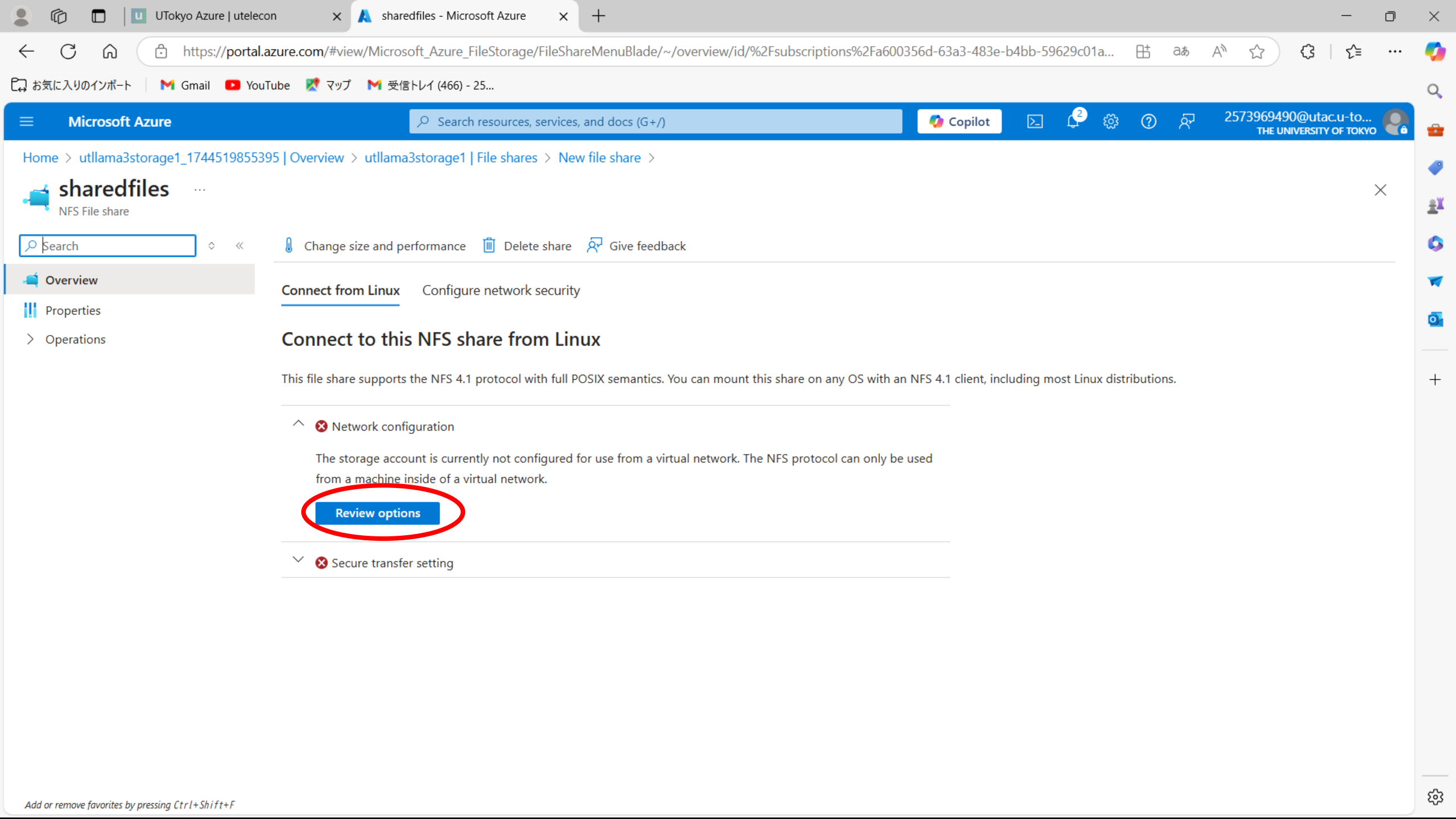
Create

< Previous

Next >

Download a template for automation

Give feedback



# sharedfiles

NFS File share

- Change size and performance
- Delete share
- Give feedback

- Overview
- Properties
- Operations

[Connect from Linux](#) Configure network security

## Connect to this NFS share from Linux

This file share supports the NFS 4.1 protocol with full POSIX semantics. You can mount this share on any OS with an NFS 4.1 client, including most Linux distributions.

### Network configuration

The storage account is currently not configured for use from a virtual network. The NFS protocol can only be used from a machine inside of a virtual network.

[Review options](#)

### Secure transfer setting

## Network security options

The use of the NFS protocol for an Azure file share requires network-level security configurations and disabling the "secure transfer required" storage account configuration.



### Private endpoint

A private endpoint gives your storage account a private, static IP address within your virtual network, preventing connectivity interruptions from dynamic IP address changes. Traffic to your storage account stays within peered virtual networks, including those in other regions and on premises. [Learn more.](#)

Standard data processing rates for private endpoints apply. [Learn more.](#)

[Setup a private endpoint](#)



### Service endpoint

If you don't require a static IP address, you can enable a service endpoint for Azure Files within the virtual network. A service endpoint configures storage accounts to allow access only from specific subnets. The allowed subnets can belong to a virtual network in the same subscription or a different subscription, including those that belong to a different Microsoft Entra tenant. There's no extra charge for using service endpoints. [Learn more.](#)

[Configure service endpoint](#)



### Connect from on-premises

You may want machines from outside of Azure to use the NFS protocol with this share. These articles describe options for connecting to the vnet you've configured for this storage account and share. A private endpoint may be required.

[Azure Express route](#)  
[Site to site VPN](#)  
[Point to site VPN](#)

Home > utllama3storage1\_1744519855395 | Overview > utllama3storage1 | File shares > New file share > sharedfiles >

# Networking

Firewalls and virtual networks   Private endpoint connections

**+ Private endpoint**   Approve   Reject   Remove   Refresh

Filter by name...   All connection states

Connection name	Connection state	Private endpoint	Description
No results			



Home > utllama3storage1\_1744519855395 | Overview > utllama3storage1 | File shares > New file share > sharedfiles > Networking >

# Create a private endpoint

- 1 Basics
- 2 Resource
- 3 Virtual Network
- 4 DNS
- 5 Tags
- 6 Review + create

Use private endpoints to privately connect to a service or resource. Your private endpoint must be in the same region as your virtual network, but can be in a different region from the private link resource that you are connecting to. [Learn more](#)

## Project details

Subscription \* ⓘ 1923306880-YamakataTraining

Resource group \* ⓘ llama3-finetune

[Create new](#)

## Instance details

Name \* llama3-finetune-endpoint ✓

Network Interface Name \* llama3-finetune-endpoint-nic ✓

Region \* East US 2

Home > utllama3storage1\_1744519855395 | Overview > utllama3storage1 | File shares > New file share > sharedfiles > Networking >

## Create a private endpoint

- ✓ Basics
- 2 Resource**
- 3 Virtual Network
- 4 DNS
- 5 Tags
- 6 Review + create

Private Link offers options to create private endpoints for different Azure resources, like your private link service, a SQL server, or an Azure storage account. Select which resource you would like to connect to using this private endpoint. [Learn more](#)

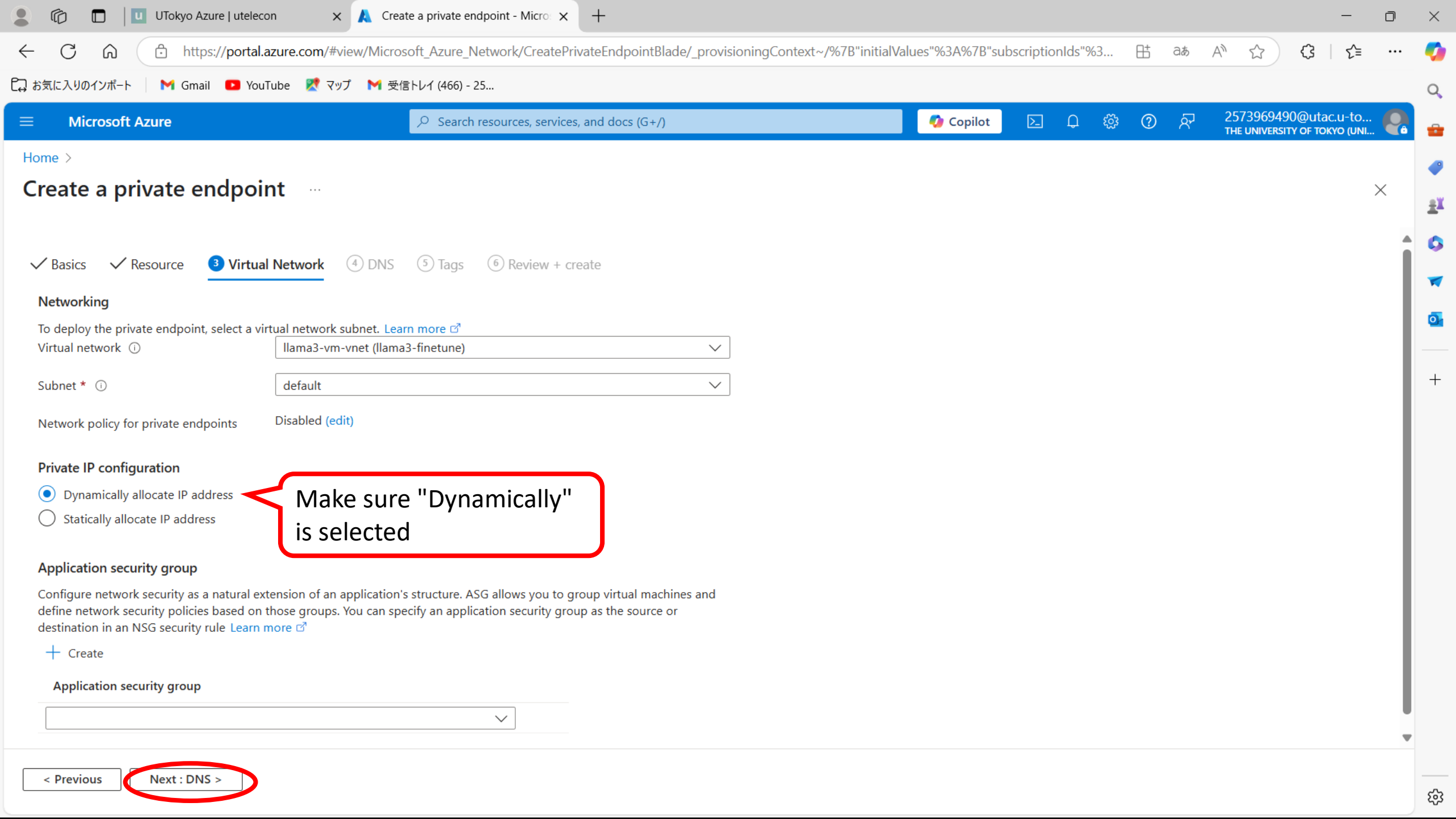
Subscription 1923306880-YamakataTraining (a600356d-63a3-483e-b4bb-59629c01a212)

Resource type Microsoft.Storage/storageAccounts

Resource utllama3storage1

Target sub-resource \* ⓘ

Make sure it's a file.



# Create a private endpoint

- ✓ Basics
- ✓ Resource
- 3 Virtual Network**
- 4 DNS
- 5 Tags
- 6 Review + create

## Networking

To deploy the private endpoint, select a virtual network subnet. [Learn more](#)

Virtual network ⓘ llama3-vm-vnet (llama3-finetune) ▼

Subnet \* ⓘ default ▼

Network policy for private endpoints Disabled [\(edit\)](#)

## Private IP configuration

- Dynamically allocate IP address
- Statically allocate IP address

Make sure "Dynamically" is selected

## Application security group

Configure network security as a natural extension of an application's structure. ASG allows you to group virtual machines and define network security policies based on those groups. You can specify an application security group as the source or destination in an NSG security rule [Learn more](#)

+ Create

Application security group

▼

< Previous

Next : DNS >

# Create a private endpoint

- ✓ Basics
- ✓ Resource
- ✓ Virtual Network
- 4 DNS**
- 5 Tags
- 6 Review + create

## Private DNS integration

To connect privately with your private endpoint, you need a DNS record. We recommend that you integrate your private endpoint with a private DNS zone. You can also utilize your own DNS servers or create DNS records using the host files on your virtual machines. [Learn more](#)

Integrate with private DNS zone  Yes  No

Configuration name	Subscription	Resource group	Private DNS zone
privatelink-file-core-wind...	1923306880-Yamaka...	llama3-finetune	(new) pri...

for "Integrate with private DNS zones," select "Yes."

# Create a private endpoint

- ✓ Basics
- ✓ Resource
- ✓ Virtual Network
- ✓ DNS
- 5 Tags**
- 6 Review + create

Tags are name/value pairs that enable you to categorize resources and view consolidated billing by applying the same tag to multiple resources and resource groups. [Learn more about tags](#)

Note that if you create tags and then change resource settings on other tabs, your tags will be automatically updated.

Name ⓘ	Value ⓘ	Resource
<input type="text"/>	: <input type="text"/>	2 selected ▼

Home >

# Create a private endpoint

✓ Validation passed

- ✓ Basics
- ✓ Resource
- ✓ Virtual Network
- ✓ DNS
- ✓ Tags
- 6 Review + create**

## Basics

Subscription	1923306880-YamakataTraining
Resource group	llama3-finetune
Region	West US
Name	llama-finetune-endpoint
Network Interface Name	llama-finetune-endpoint-nic

## Resource

Subscription ID	a600356d-63a3-483e-b4bb-59629c01a212 (1923306880-YamakataTraining)
Link type	Microsoft.Storage/storageAccounts
Resource group	llama3-finetune
Resource	utllama3storage1
Target sub-resource	file

## Virtual Network

Virtual network resource group	llama3-finetune
--------------------------------	-----------------

**Create**

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Next >

[Download a template for automation](#)

Home >

# Microsoft.PrivateEndpoint-20250414102523 | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

- Overview
- Inputs
- Outputs
- Template

## Deployment is in progress

Deployment name : Microsoft.PrivateEndpoint-20250414102523      Start time : 4/14/2025, 10:29:43 AM  
 Subscription : 1923306880-YamakataTraining      Correlation ID : 02f6c29d-733d-41a7-af31-4d646fea5aba  
 Resource group : llama3-finetune

### Deployment details

Resource	Type	Status	Operation details
----------	------	--------	-------------------

There are no resources to display.



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Home >

# Microsoft.PrivateEndpoint-20250414102523 | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

- Overview
- Inputs
- Outputs
- Template

Your deployment is complete

Deployment name : Microsoft.PrivateEndpoint-20250414102523 Start time :   
Subscription : 1923306880-YamakataTraining Correlation ID : 02f6c29d-733d-41a7-af31-4d646fea5aba  
Resource group : llama3-finetune

> Deployment details

∨ Next steps

**Go to resource**



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# llama-finetune-endpoint

Private endpoint


Search Delete Refresh


- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Resource visualizer
- Settings
- Monitoring
- Automation
- Help

## Essentials JSON View

Resource group (move) :	<a href="#">llama3-finetune</a>	Virtual network/subnet :	<a href="#">llama3-vm-vnet/default</a>
Location :	West US	Network interface :	<a href="#">llama-finetune-endpoint-nic</a>
Subscription (move) :	<a href="#">1923306880-YamakataTraining</a>	Private link resource :	<a href="#">utllama3storage1</a>
Subscription ID :	a600356d-63a3-483e-b4bb-59629c01a212	Target sub-resource :	file
Provisioning state :	Succeeded	Connection status :	Approved
Tags (edit) :	<a href="#">Add tags</a>	Request/Response :	Auto-Approved








### Azure services

 Create a resource

 Storage accounts

### Resources

Recent Favorite

- | Name  |
|---|
|  llama-finetune-endpoint       |
|  llama3-finetune               |
|  utllama3storage1              |
|  ML-workspace                  |
|  (new)ML-test                 |
|  openai_test1                |
|  1923306880-YamakataTraining |

See all






### Navigate

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



Search history Clear all

- Storage
- virtual machines
- Azure ma
- AI found
- subscriptions


Recent services


 Storage accounts	 Virtual machines	 Azure Machine Learning	 Azure AI Foundry
 Azure OpenAI	Sub		


Recent resources See more

 llama-finetune-endpoint	Private endpoint
 llama3-finetune	Resource group

Searching all subscriptions. Give feedback

 Quickstart Center

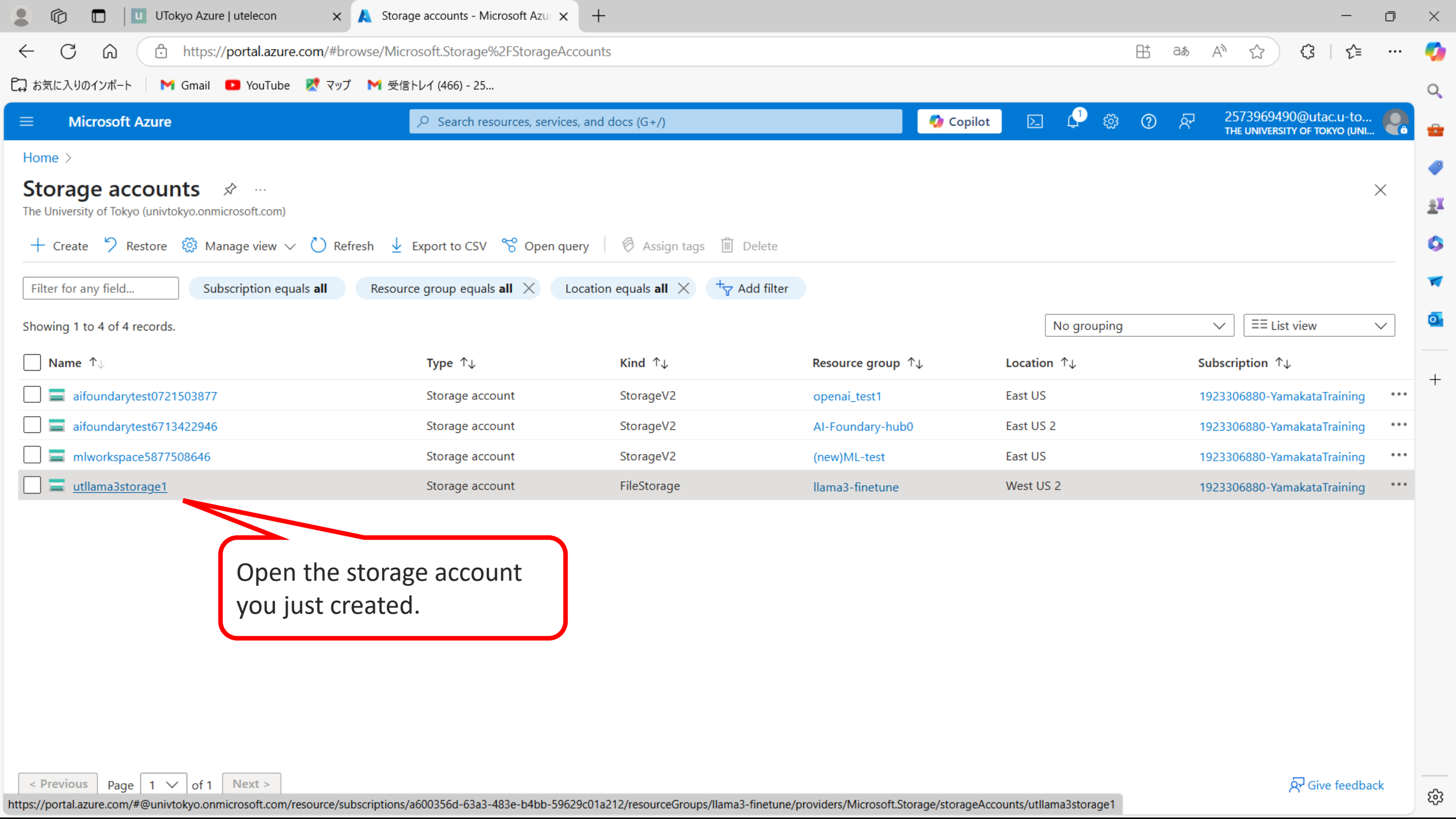
 Azure AI services

 More services

### Last Viewed

- a few seconds ago
- 3 minutes ago
- 21 hours ago
- 6 days ago
- 6 days ago
- a week ago
- a week ago

Open "Storage Accounts"



Home >

# Storage accounts

The University of Tokyo (univtokyo.onmicrosoft.com)

+ Create   Restore   Manage view   Refresh   Export to CSV   Open query   Assign tags   Delete

Filter for any field...   Subscription equals all   Resource group equals all   Location equals all   Add filter

Showing 1 to 4 of 4 records.

No grouping   List view

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Kind ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓	
<input type="checkbox"/>	<a href="#">aifoundarytest0721503877</a>	Storage account	StorageV2	openai_test1	East US	1923306880-YamakataTraining	...
<input type="checkbox"/>	<a href="#">aifoundarytest6713422946</a>	Storage account	StorageV2	AI-Foundary-hub0	East US 2	1923306880-YamakataTraining	...
<input type="checkbox"/>	<a href="#">mlworkspace5877508646</a>	Storage account	StorageV2	(new)ML-test	East US	1923306880-YamakataTraining	...
<input type="checkbox"/>	<a href="#">utllama3storage1</a>	Storage account	FileStorage	llama3-finetune	West US 2	1923306880-YamakataTraining	...

Open the storage account you just created.

Home > Storage accounts >

# Storage accounts

The University of Tokyo (univtokyo.onmicrosof.co...

+ Create Restore ...

Filter for any field...

Name ↑↓

- aifoundarytest0721503877
- aifoundarytest6713422946
- mlworkspace5877508646
- utllama3storage1**

## utllama3storage1

Storage account

Search

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- Data storage
  - File shares**
  - Security + networking
  - Data management
  - Settings
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Upload Open in Explorer Delete Move Refresh Open in mobile Feedback

Essentials JSON View

Resource group (move)	Performance
llama3-finetune	Premium
Location	Replication
westus2	Locally-redundant storage (LRS)
Subscription (move)	Account kind
1923306880-YamakataTraining	FileStorage
Subscription ID	Provisioning state
a600356d-63a3-483e-b4bb-59629c01a212	Succeeded
Disk state	Created
Available	2025/4/13 13:51:39
Tags (edit)	
Add tags	

Properties Monitoring Capabilities (2) Recommendations (0) Tutorials Tools + SDKs

File service	Networking
Large file share	Allow access from
Identity-based access	Private endpoint connections
Default share-level permissions	Network routing
Soft delete	Microsoft network routing

Home > Storage accounts > utllama3storage1

### Storage accounts

The University of Tokyo (univtokyo.onmicrosoft.co...)

+ Create Restore ...

Filter for any field...

Name ↑↓

- aifoundarytest0721503877
- aifoundarytest6713422946
- mlworkspace5877508646
- utllama3storage1**

### utllama3storage1 | File shares

Storage account

Search

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- Access Control (IAM)
- Data migration
- Storage browser
- Partner solutions
- Resource visualizer
- Data storage
- File shares**
- Security + networking
- Data management
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- Automation
- Help

+ File share Refresh Give feedback


**Warning:** The NFS protocol cannot be used when "secure transfer required" is enabled for this storage account. Configure this setting →

#### File share settings

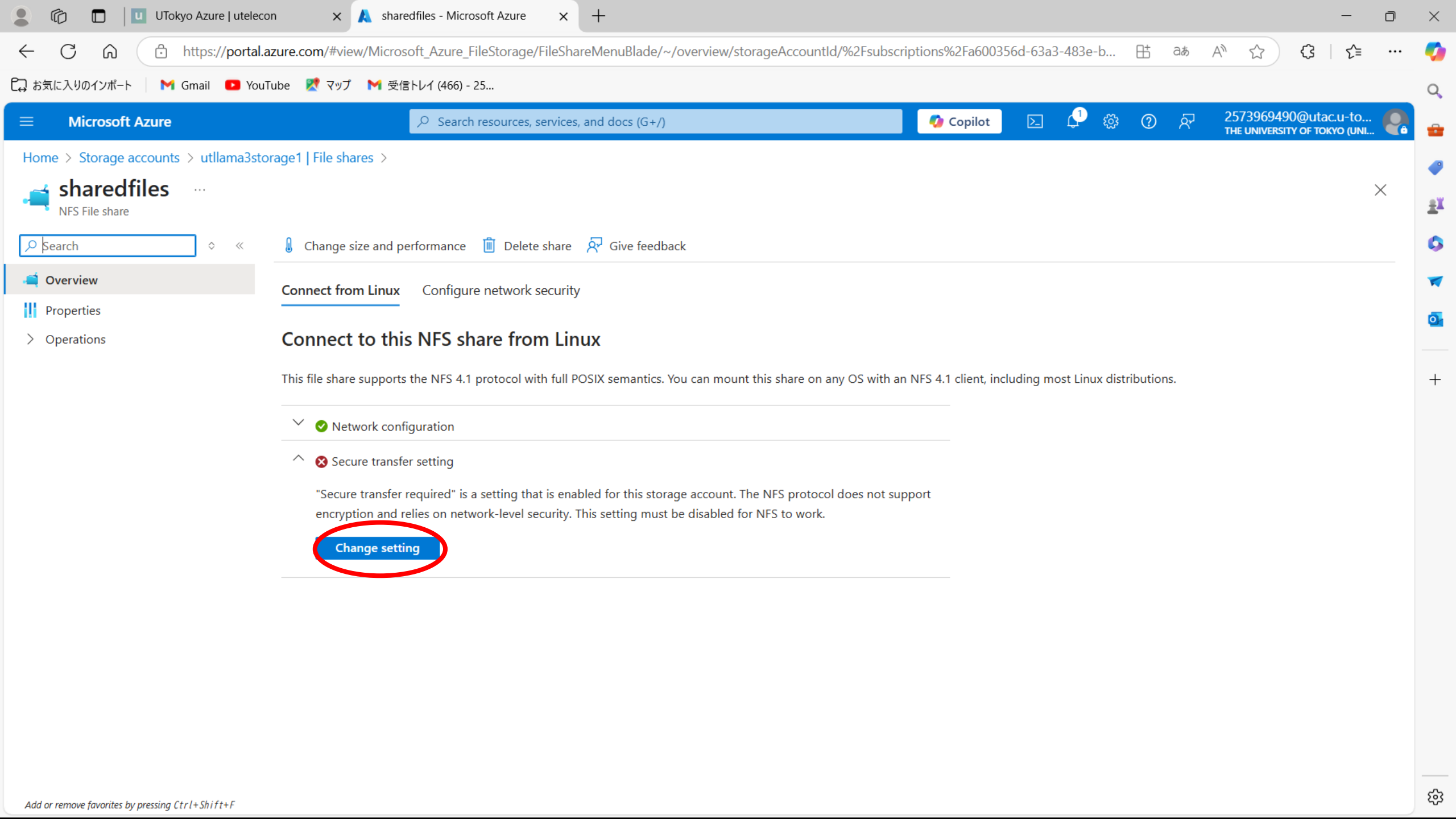
Identity-based access: **Not configured**    Default share-level permissions: **Disabled**    Soft delete: **7 days**

SMB Multichannel: **Enabled**    Security: **Maximum compatibility**

Search file shares by prefix (case-sensitive)   Show deleted shares

Name	Protocol	Provisioned storage
 <b>sharedfiles</b>	NFS	1 TiB

Open the storage you just created



# sharedfiles

NFS File share

- Change size and performance
- Delete share
- Give feedback

Overview

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Operations

Connect from Linux

Configure network security

## Connect to this NFS share from Linux

This file share supports the NFS 4.1 protocol with full POSIX semantics. You can mount this share on any OS with an NFS 4.1 client, including most Linux distributions.

✓ Network configuration

✗ Secure transfer setting

"Secure transfer required" is a setting that is enabled for this storage account. The NFS protocol does not support encryption and relies on network-level security. This setting must be disabled for NFS to work.

Change setting

# utllama3storage1 | Configuration

Storage account

Save Discard Refresh Give feedback

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- Diagnose and solve problems
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  - File shares
- Security + networking
- Data management
- Settings
  - Configuration**
  - Resource sharing (CORS)
  - Advisor recommendations

The cost of your storage account depends on the usage and the options you choose below. [Learn more about storage pricing](#)

- Account kind: FileStorage
- Performance: Premium (Selected)
- Secure transfer required: Disabled (Selected)
- Allow Blob anonymous access: Disabled (Selected)
- Allow storage account access from the Internet: Disabled (Selected)
- Allow recommended upper limit for shared access signature (SAS) expiry interval: Disabled (Selected)
- Default to Microsoft Entra authorization in the Azure portal: Disabled (Selected)
- Minimum TLS version: Version 1.2
- Permitted scope for copy operations (preview)

Require "secure transfer" set to "Disabled."

Home > Storage accounts > utllama3storage1 | File shares > sharedfiles > utllama3storage1

# utllama3storage1 | File shares

Storage account

- Search
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- Data storage
  - File shares
  - Security + networking
  - Data management
- Settings
  - Configuration
  - Resource sharing (CORS)
  - Advisor recommendations

+ File share Refresh Give feedback

### File share settings

Identity-based access: **Not configured** Default share-level permissions: **Disabled** Soft delete: **7 days** SMB Multichannel: **Enabled** Security: **Maximum compatibility**

Search file shares by prefix (case-sensitive)   Show deleted shares

Name	Protocol	Provisioned storage
 sharedfiles	NFS	1 TiB



UTokyo Azure | utelecon sharedfiles - Microsoft Azure

https://portal.azure.com/#view/Microsoft\_Azure\_FileStorage/FileShareMenuBlade/~/overview/storageAccountId/%2Fsubscriptions%2Fa600356d-63a3-483e-b...

Microsoft Azure Search resources, services, and docs (G+/) Copilot 2573969490@utac.u-to... THE UNIVERSITY OF TOKYO (UNL...)

Home > Storage accounts > utllama3storage1 | File shares > sharedfiles > utllama3storage1 | File shares >

# sharedfiles

NFS File share

Search

Change size and performance Delete share Give feedback

Overview Properties Operations

## Connect from Linux

Configure network security

### Connect to this NFS share from Linux

This file share supports the NFS 4.1 protocol with full POSIX semantics. You can mount this share on any OS with an NFS 4.1 client, including most Linux distributions.

Select your linux distribution

Debian/Ubuntu

Sample command to use NFS on the selected Linux distribution

```
sudo apt-get -y update
sudo apt-get install nfs-common
```

Mount path \*

/mount/utllama3storage1/sharedfiles

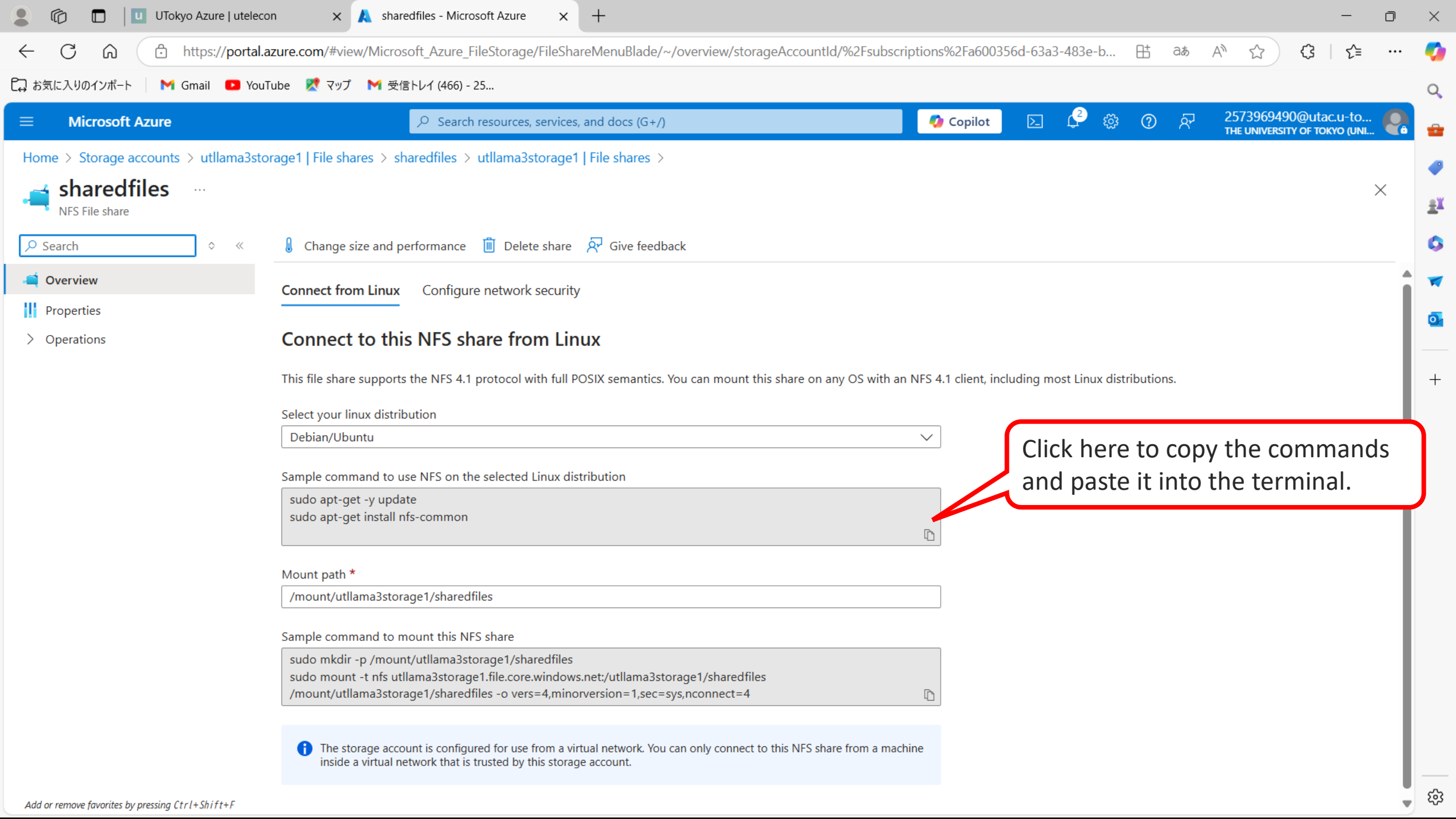
Sample command to mount this NFS share

```
sudo mkdir -p /mount/utllama3storage1/sharedfiles
sudo mount -t nfs utllama3storage1.file.core.windows.net:/utllama3storage1/sharedfiles
/mount/utllama3storage1/sharedfiles -o vers=4,minorversion=1,sec=sys,nconnect=4
```

**i** The storage account is configured for use from a virtual network. You can only connect to this NFS share from a machine inside a virtual network that is trusted by this storage account.

Add or remove favorites by pressing Ctrl+Shift+F

## 4.3 **Mount** the file share from each virtual machine



# sharedfiles

NFS File share

- Search
- Overview
- Properties
- Operations

Change size and performance Delete share Give feedback

Connect from Linux Configure network security

## Connect to this NFS share from Linux

This file share supports the NFS 4.1 protocol with full POSIX semantics. You can mount this share on any OS with an NFS 4.1 client, including most Linux distributions.

Select your linux distribution

Debian/Ubuntu

Sample command to use NFS on the selected Linux distribution

```
sudo apt-get -y update
sudo apt-get install nfs-common
```

Mount path \*

/mount/utllama3storage1/sharedfiles

Sample command to mount this NFS share

```
sudo mkdir -p /mount/utllama3storage1/sharedfiles
sudo mount -t nfs utllama3storage1.file.core.windows.net:/utllama3storage1/sharedfiles
/mount/utllama3storage1/sharedfiles -o vers=4,minorversion=1,sec=sys,nconnect=4
```

**i** The storage account is configured for use from a virtual network. You can only connect to this NFS share from a machine inside a virtual network that is trusted by this storage account.

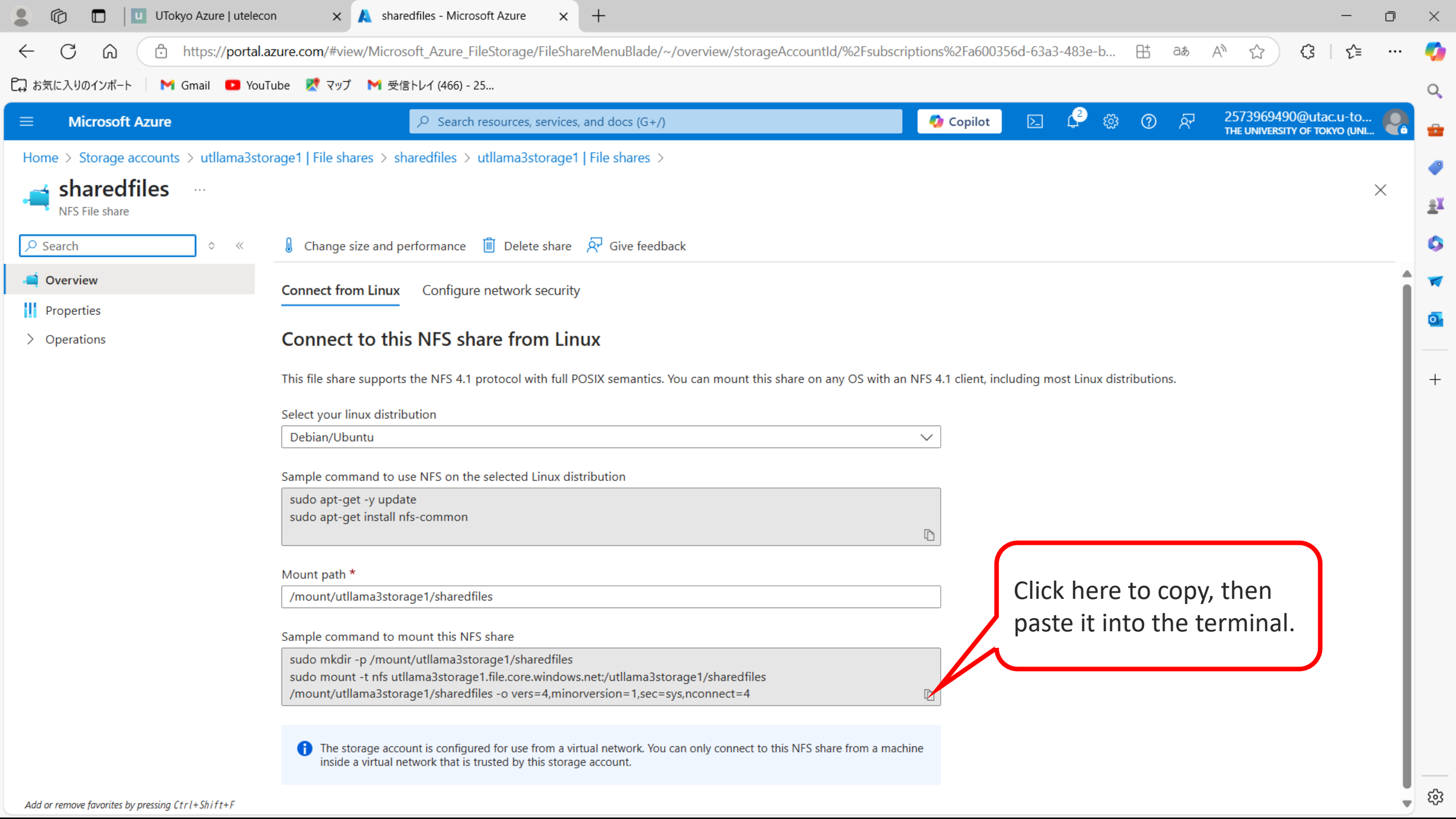
Click here to copy the commands and paste it into the terminal.

1. In **Windows PowerShell**, you can paste copied text by simply **right-clicking**.

```
azureuser@llama3-vm:~$ sudo apt-get -y update  
sudo apt-get install nfs-common
```

2. Press **Enter** to run the command.
3. If you're prompted with "**Do you want to continue? [Y/n]**", type "**Y**" and press Enter.

```
Running kernel seems to be up-to-date.  
  
No services need to be restarted.  
  
No containers need to be restarted.  
  
No user sessions are running outdated binaries.  
  
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
azureuser@llama3-vm:~$ |
```



[Connect from Linux](#)   Configure network security

## Connect to this NFS share from Linux

This file share supports the NFS 4.1 protocol with full POSIX semantics. You can mount this share on any OS with an NFS 4.1 client, including most Linux distributions.

Select your linux distribution

Debian/Ubuntu

Sample command to use NFS on the selected Linux distribution

```
sudo apt-get -y update
sudo apt-get install nfs-common
```

Mount path \*

/mount/utllama3storage1/sharedfiles

Sample command to mount this NFS share

```
sudo mkdir -p /mount/utllama3storage1/sharedfiles
sudo mount -t nfs utllama3storage1.file.core.windows.net:/utllama3storage1/sharedfiles
/mount/utllama3storage1/sharedfiles -o vers=4,minorversion=1,sec=sys,nconnect=4
```

Click here to copy, then paste it into the terminal.

**i** The storage account is configured for use from a virtual network. You can only connect to this NFS share from a machine inside a virtual network that is trusted by this storage account.

- After you run the command, the shared file will be mounted (connected) to this virtual machine.
- The mount point will be: `"/mount/[storage account name]/[file share name]"`
- In the example below: `"/mount/utllama3storage1/sharedfiles"`

```
azureuser@llama3-vm:~$ sudo mkdir -p /mount/utllama3storage1/sharedfiles
sudo mount -t nfs utllama3storage1.file.core.windows.net:/utllama3storage1/sharedfiles /mount/utllama3storage1/sharedfiles -o vers=4,minorversion=1,sec=sys,nconnect=4
azureuser@llama3-vm:~$ cd /mount/utllama3storage1/sharedfiles/
azureuser@llama3-vm:/mount/utllama3storage1/sharedfiles$ ls
azureuser@llama3-vm:/mount/utllama3storage1/sharedfiles$ touch test.txt
azureuser@llama3-vm:/mount/utllama3storage1/sharedfiles$ ls
test.txt
azureuser@llama3-vm:/mount/utllama3storage1/sharedfiles$ |
```

- The command starting with `"sudo mount -t nfs [...]"` must be run every time the virtual machine is restarted.
- To enable automatic mounting, you need to edit the `"/etc/fstab"` file.

# 4.4 Configure automatic mounting on reboot

Editing “/etc/fstab”

Reference: [Mount an NFS share using /etc/fstab](#)

# Add the following line to the end of “/etc/fstab”

- Insert one single line (no line breaks) as shown below:

```
[storage_account_name].file.core.windows.net:[storage_account_name]/[share_name]  
/mount/[storage_account_name]/[share_name] nfs  
vers=4,minorversion=1,_netdev,nofail,sec=sys 0 0
```

- In this example, it is as follows

```
utllama3storage1.file.core.windows.net:/utllama3storage1/sharedfiles  
/mount/utllama3storage1/sharedfiles nfs vers=4,minorversion=1,_netdev,nofail,sec=sys 0 0
```



# Editing “/etc/fstab” with the vi Editor

1. To avoid issues, make a backup copy before editing:  
(If /etc/fstab is misconfigured, the VM may fail to boot.)

```
sudo cp -p /etc/fstab /etc/fstab.bak
```

2. Prepare the line to insert  
Create the line in a text editor (like Notepad), so you can copy and paste it easily.  
Example to add:

```
utllama3storage1.file.core.windows.net:/utllama3storage1/sharedfiles  
/mount/utllama3storage1/sharedfiles nfs vers=4,minorversion=1,_netdev,nofail,sec=sys 0 0
```

3. Open the editor  

```
sudo vi /etc/fstab
```
4. Move the cursor to the bottom of the file
5. Press o to create a new line (you should see -- INSERT -- at the bottom left)
6. Right-click to paste the line (on WindowsOS)
7. Press Esc to exit insert mode
8. Type :wq to save and exit (w = write, q = quit)

**If you make a mistake, press Esc and type ":q!" to exit without saving changes**

# Reboot the VM

- After restarting the virtual machine using the command “sudo reboot”, the file share is still visible when reconnecting.

```
azureuser@llama3-vm:/mount/utllama3storage1/sharedfiles$ sudo cp -p /etc/fstab /  
etc/fstab.bak  
azureuser@llama3-vm:/mount/utllama3storage1/sharedfiles$ sudo vi /etc/fstab  
azureuser@llama3-vm:/mount/utllama3storage1/sharedfiles$ sudo reboot
```



Reboot and log-in again

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

```
Last login: Mon Apr 14 13:26:57 2025 from 106.72.191.195  
azureuser@llama3-vm:~$ ls /mount/utllama3storage1/sharedfiles/  
test.txt
```

# 4.5 Verify that all virtual machines can read and write to the same file share

Create a virtual machine with vCPUs only, and mount the file share from there.

Home > Virtual machines >

# Create a virtual machine

⚠ Changing Basic options may reset selections you have made. Review all options prior to creating the virtual machine.

- Help me create a low cost VM
- Help me create a VM optimized for high availability
- Help me choose the right VM size for my workload

Select the subscription to manage deployed resources and costs. Use the same subscription for all resources.

Subscription \* ⓘ 1923306880-YamakataTrain

Resource group \* ⓘ llama3-finetune ▼  
[Create new](#)

Select the same resource group with the GPU enabled VM.

## Instance details

Virtual machine name \* ⓘ llama3-vm2 ✓

Region \* ⓘ (US) West US ▼

Availability options ⓘ No infrastructure redundancy required ▼

Security type ⓘ Standard ▼

**i** Trusted launch virtual machine is required when using 1P Gallery images.

Image \* ⓘ Ubuntu Server 24.04 LTS - x64 Gen2 ▼

[See all images](#) | [Configure VM generation](#)

Home > Virtual machines >

# Create a virtual machine

⚠ Changing Basic options may reset selections you have made. Review all options prior to creating the virtual machine.

Help me create a low cost VM | Help me create a VM optimized for high performance workload

Running a 13b model requires at least 32 GiB of memory

x64

Run with Azure Spot discount

Size \*

[See all sizes](#)

Enable Hibernation

**i** Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernation to enable this feature. [Learn more](#)

## Administrator account

Authentication type  SSH public key  Password

**i** Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.

Username \*

# Create a virtual machine

⚠ Changing Basic options may reset selections you have made. Review all options prior to creating the virtual machine.

Help me create a low cost VM | Help me create a VM optimized for high availability

ℹ Azure now automatically generates an SSH key pair for you and stores it for future use. It is a fast, simple, and secure way to connect to your virtual machine.

You can share the same SSH key with the GPU-enabled VM created earlier (Alternatively, you can also create a new key separately.)

Username \* ⓘ

azureuser ✓

SSH public key source

Use existing key stored in Azure ✓

ℹ Ed25519 and RSA SSH formats are supported for the selected VM image. Ed25519 provides a fixed security level of no more than 128 bits for 256-bit key, while RSA could offer better security with keys longer than 3072 bits.

Stored Keys

llama3--\_key ✓

## Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports \* ⓘ

None

Allow selected ports

Select inbound ports \*

SSH (22)

Home > Virtual machines >

# Create a virtual machine

- Help me create a low cost VM
- Help me create a VM optimized for high availability
- Help me choose the right VM size for my workload

Basics **Disks** Networking Management Monitoring Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

## VM disk encryption

Azure disk storage encryption automatically encrypts your data stored on Azure managed disks (OS and data disks) at rest by default when persisting it to the cloud.

Encryption at host

**i** Encryption at host is not registered for the selected subscription. [Learn more](#)

## OS disk

OS disk size

OS disk type \*

Delete with VM

Key management

Home > Virtual machines >

# Create a virtual machine

- Help me create a low cost VM
- Help me create a VM optimized for high availability
- Help me choose the right VM size for my workload

Basics Disks **Networking** Management Monitoring Advanced Tags Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. [Learn more](#)

## Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network \* ⓘ llama3-vm-vnet [Create new](#)

Subnet \* ⓘ default (10.0.0.0/24) [Manage subnet configuration](#)

Public IP ⓘ (new) llama3-vm2-ip [Create new](#)

NIC network security group ⓘ

- None
- Basic
- Advanced



Home > Virtual machines >

# Create a virtual machine

Validation passed

- Help me create a low cost VM
- Help me create a VM optimized for high availability
- Help me choose the right VM size for my workload

Basics Disks Networking Management Monitoring Advanced Tags Review + create

## Price

1 X Standard D8s v3  
by Microsoft  
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply ⓘ  
**72.3060 JPY/hr**  
[Pricing for other VM sizes](#)

## TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

Name

Preferred e-mail address

< Previous Next > **Create**

[Download a template for automation](#) [Give feedback](#)

Home > CreateVm-canonical.ubuntu-24\_04-lts-server-20250414231207 | Overview

Search Delete Cancel Redeploy Download Refresh

- Overview
- Inputs
- Outputs
- Template

**✓ Your deployment is complete**

Deployment name: CreateVm-canonical.ubuntu-2... Start time: 4/14/2025, 11:29:42 PM  
Subscription: 1923306880-YamakataTraining Correlation ID: f00bbcfb-3212-42a4-af5  
Resource group: llama3-finetune

- Deployment details
  - Next steps
    - Setup auto-shutdown Recommended
    - Monitor VM health, performance and network dependencies Recommended
    - Run a script inside the virtual machine Recommended
- Go to resource** Create another VM

Give feedback  
Tell us about your experience with deployment

**Cost Management**  
Get notified to stay within your budget and prevent unexpected charges on your bill.  
[Set up cost alerts >](#)

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Home > CreateVm-canonical.ubuntu-24\_04-lts-server-20250414231207 | Overview >

# llama3-vm2

Virtual machine

Search

Help me copy this VM in any region

## Overview

- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Resource visualizer
- > Connect
- > Networking
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- > Operations
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- > Automation
- > Help

Connect Start Restart Stop Hibernate Capture Delete Refresh Open in mobile

### Essentials

JSON View

Resource group [\(move\)](#)  
[llama3-finetune](#)

Status  
Running

Location  
West US

Subscription [\(move\)](#)  
[1923306880-YamakataTraining](#)

Subscription ID  
a600356d-63a3-483e-b4bb-59629c01a212

Operating system  
Linux (ubuntu 24.04)

Size  
Standard D8s v3 (8 vcpus, 32 GiB memory)

Public IP address  
[172.184.160.24](#)

Virtual network/subnet  
[llama3-vm-vnet/default](#)

DNS name  
[Not configured](#)

Health state  
-

Time created  
4/14/2025, 2:29 PM UTC

Log in with this IP address

Tags [\(edit\)](#)  
[Add tags](#)

Properties Monitoring Capabilities (7) Recommendations Tutorials

# Configure the same settings as a VM with a GPU.

1. Remote login with ssh  
`ssh -i ./.ssh/utllama3--_key.pem azureuser@172.184.160.24`
2. Execute the same command as a VM with GPU
  1. `sudo apt-get -y update`
  2. `sudo apt-get install nfs-common`
  3. `sudo mkdir -p /mount/utllama3storage1/sharedfiles`
  4. `sudo mount -t nfs  
utllama3storage1.file.core.windows.net:/utllama3storage1/sharedfiles  
/mount/utllama3storage1/sharedfiles -o vers=4,minorversion=1,sec=sys,nconnect=4`
3. If you want to mount automatically even after rebooting, add "etc/fstab" as well as VM with GPU

```
azureuser@llama3-vm2: ~
m/nfs-client.target.
Created symlink /etc/systemd/system/remote-fs.target.wants/nfs-client.target → /usr/lib/systemd/system/nfs-client.target.
auth-rpcgss-module.service is a disabled or a static unit, not starting it.
nfs-idmapd.service is a disabled or a static unit, not starting it.
nfs-utils.service is a disabled or a static unit, not starting it.
proc-fs-nfsd.mount is a disabled or a static unit, not starting it.
rpc-gssd.service is a disabled or a static unit, not starting it.
rpc-statd-notify.service is a disabled or a static unit, not starting it.
rpc-statd.service is a disabled or a static unit, not starting it.
rpc-svcgssd.service is a disabled or a static unit, not starting it.
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.4) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
azureuser@llama3-vm2:~$ sudo mkdir -p /mount/utlllama3storage1/sharedfiles
azureuser@llama3-vm2:~$ sudo mount -t nfs utlllama3storage1.file.core.windows.net:/utlllama3storage1/sharedfiles /mount/utlllama3storage1/sharedfiles -o vers=4,minorversion=1,sec=sys,nconnect=4
azureuser@llama3-vm2:~$ ls /mount/utlllama3storage1/sharedfiles/
test.txt
azureuser@llama3-vm2:~$ |
```

- You can see the files that were created on the GPU-enabled VM.
- Files created here can also be accessed from there.

# Creating User Accounts for NFS File Sharing Across Multiple Virtual Machines

- When sharing a single file share using NFS across multiple virtual machines, and you need to create user accounts on each VM individually, please follow these steps:
- Assign the same user ID (UID) to each user on all VMs!

**1. Assign the same user ID (UID) to each user on all VMs**

Assign UIDs starting from 1001, in order.

Example:

user	Account name	User ID (uid)
Ichiro Suzuki	isuzuki	1001
Futaba Sato	jsato	1002
Saburo Tanaka	pauses	1003

**2. Create an account on each virtual machine with the following command:**

`sudo adduser -u [user ID] [account name]`

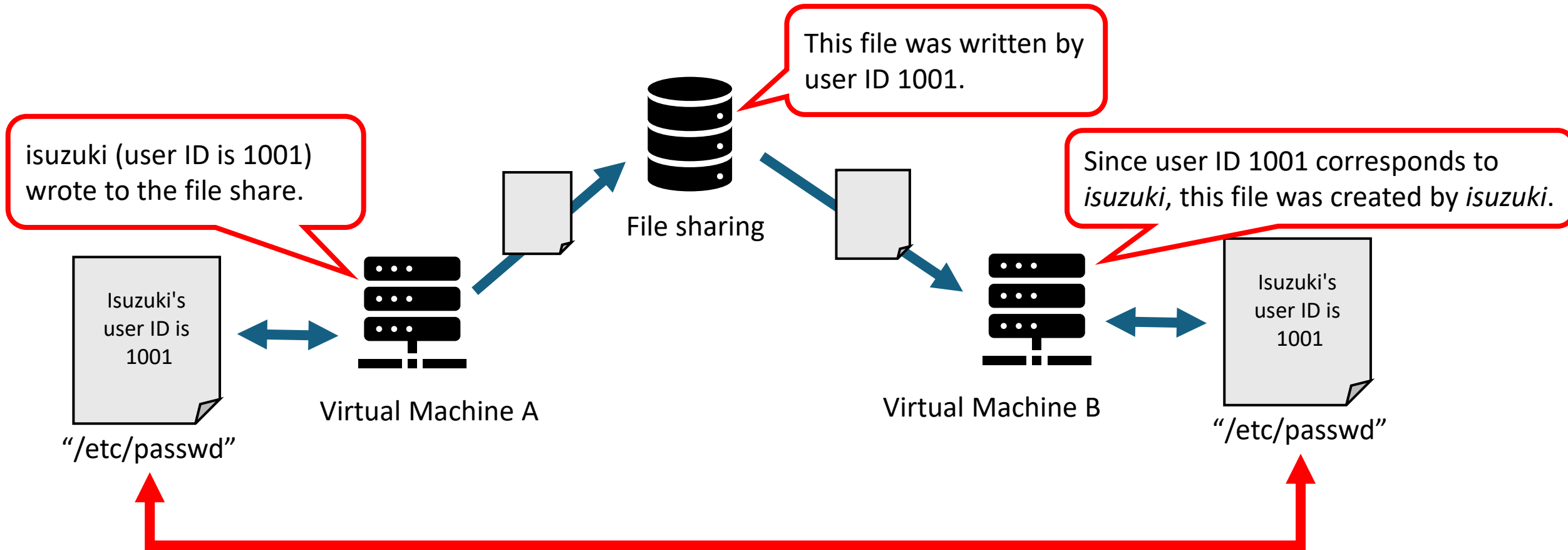
To create an account for **Ichiro Suzuki**: `sudo adduser -u 1001 isuzuki`

- It is crucial that the username and UID pairs are identical across all virtual machines that mount the same NFS file share.
  - You can verify the created accounts by checking the end of the “/etc/passwd” file on each VM.

例) isuzuki:x:1001:1001:Ichiro Suzuki,Room102,080-1234-5678,080-5678-1234,student:/home/isuzuki:/bin/bash

# Why do user IDs need to match across virtual machines?

- In an NFS file share, **file ownership is recorded by user ID (UID), not by username.**
- If the same username has a **different UID** on another virtual machine, **ownership will appear to be incorrect**, and access issues may occur.



The same account must have the same user ID!

# 5. Stop the virtual machine to avoid unnecessary charges

Even if you're not actively using it or shutdown the virtual machine, you will continue to be charged until the VM releases the allocated resources!

Reference: [States and billing status of Azure Virtual Machines](#)



Home >

# Virtual machines

The University of Tokyo

+ Create | Switch to classic | Reservations | Manage view | Refresh | Export to CSV | Open query | Assign tags | Start | Restart

training

Subscription equals all

Type equals all

Resource group equals all

Location equals all

When the status is "Running," you are being billed.

Showing 1 to 2 of 2 records.

Name	Subscription	Resource group	Location	Status	Operating system	Size	Public IP address
llama3-vm	1923306880-Yamakato...	llama3-finetune	West US	Running	Linux	Standard_NC24ads_A1...	13.91.254.36
llama3-vm2	1923306880-Yamakato...	llama3-finetune	West US	Running	Linux	Standard_D8s_v3	172.184.160.1

PS C:\Users\yamak> ssh -i .\.ssh\llama3--\_key.pem azureuser@13.91.254.36

Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.11.0-1012-azure x86\_64)

\* Documentation: <https://help.ubuntu.com>  
\* Management: <https://landscape.canonical.com>  
\* Support: <https://ubuntu.com/pro>

System information as of Mon Apr 14 15:09:15 UTC 2025

System load:	0.0	Temperature:	46.9 C
Usage of /:	7.2% of 28.02GB	Processes:	312
Memory usage:	0%	Users logged in:	0
Swap usage:	0%	IPv4 address for eth0:	10.0.0.4

\* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s just raised the bar for easy, resilient and secure K8s cluster deployment.

<https://ubuntu.com/engage/secure-kubernetes-at-the-edge>

Expanded Security Maintenance for Applications is not enabled.

55 updates can be applied immediately.

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`

Last login: Mon Apr 14 14:08:27 2025 from 106.72.191.195

azureuser@llama3-vm:~\$ sudo shutdown -h now

Shutdown the VM with the command:

`% sudo shutdown -h now`

# Virtual machines

The University of Tokyo

+ Create | Switch to classic | Reservations | Manage view

If you stop the virtual machine using the shutdown command **inside the VM**, the status becomes **“Stopped”**, and **charges will still apply** for both vCPU and GPU.

training | Subscription equals all | Type equals all | Resource group equals all

Showing 1 to 2 of 2 records. | No grouping | List view

Name	Subscription	Resource group	Location	Status	Operating system	Size	Public IP address	Disks
llama3-vm	1923306880-Yamakato...	LLAMA3-FINETUNE	West US	Stopped	Linux	Standard_NC24ads_A1...	13.91.254.36	1
llama3-vm2	1923306880-Yamakato...	llama3-finetune	West US	Running	Linux	Standard_D8s_v3	172.184.160.24	1

### Virtual machines

The University of Tokyo

+ Create Switch to classic Reservations Manage view Refresh Export to CSV Open query Assign tags Start Restart **Stop** Delete

**Do you want to stop all the selected virtual machines?**  
This operation will stop all the virtual machines selected below.

**Yes** No

	Operating system	Size	Public IP address	Disks
<input checked="" type="checkbox"/> llama3-vm	Linux	Standard_NC24ads_A1...	13.91.254.36	1
<input type="checkbox"/> llama3-vm2	Linux	Standard_D8s_v3	172.184.160.24	1

Home > Virtual machines

The University of Tokyo

+ Create | Switch to classic | Reservations | Manage view | Refresh | Export to CSV | Open query | Assign tags | Start | Restart | Stop | Delete

training | Subscription equals all | Type equals all | Resource group equals all | Location equals all | Add filter

Showing 1 to 2 of 2 records. | No grouping | List view

Name	Subscription	Resource group	Location	Status	Operating system	Size	Public IP address	Disks
llama3-vm	1923306880-Yamakata...	llama3-finetune	West US	Stopped (deallocated)	linux	Standard_NC24ads_A1...	13.91.254.36	1
llama3-vm2	1923306880-Yamakata...	llama3-finetune	West US	Running	Linux	Standard_D8s_v3	172.184.160.24	1

- When the VM status shows **“Stopped (deallocated)”**, you are **not charged** for vCPU or GPU usage.
- Even if the status is **“Stopped (deallocated)”**, you will **still be charged** for **OS disk, storage, public IP**, and other attached resources.
- If you no longer need the VM and related resources, the simplest way to stop billing is to **delete the entire resource group**.