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Get started with OpenAI's services

This slide is 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 OpenAI Service documentation.

Purpose

- <u>Two Options for Using Pretrained Models</u>
 - Azure OpenAI Service: For immediate access to OpenAI models
 - Azure AI Foundry: For access to various models including OpenAI

Roadmap for Azure OpenAI Service

- 1. Create a resource group
- 2. Select a model from the model catalog (e.g., choose "gpt-4o")
- 3. Run chat sessions using the "Chat Playground"
- 4. How to use the service via Web API from your code **Additional Topics**
- 5.1 Pricing5.2 Token limits per minute5.3 Data, privacy, and security

Using Other Pretrained Models (via Azure AI Foundry)

Example: DeepSeek R1

1. Create a resource group



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🕗 Al Search	
Computer vision	
💽 Face API	
💽 Custom vision	
Speech service	No Azure OpenAI to display
🗾 Language service	Perform a wide variety of natural language tasks.
है: Translator	+ Create Azure OpenAl
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Bot services	Learn more ♂ Give feedback



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O View automation template

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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.

Basics

Subscription	1923306880-YamakataTraining
Resource group	openai_test1
Region	Japan East
Name	gprt-4o-test-1
Pricing tier	Standard S0

Next



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> Help	Get Started Develop Monitor				

Build your own secure copilot and generative AI applications with Azure OpenAI Service

Deploy an Azure OpenAI model and start making API calls. Connect your own data, call functions, and improve workflow with Azure OpenAI language, image and speech models. You can access the service through





2. Select a model from the model catalog









How about gpt-o1? (as of February 2025) [Azure documentation]

Models	Description
computer-use-preview	An experimental model trained for use with the Responses API computer use tool.
GPT-4.5 Preview	The latest GPT model that excels at diverse text and image tasks.
o-series models	Reasoning models with advanced problem-solving and reased focus and capability.
GPT-4o & GPT-4o mini & GPT-4 Turbo	The late capable Azure OpenAl models with multimodal by bich can accept both text and images as input
GPT-4o audio	GPT-40 at "speech ir generation is required for the O1 system.
GPT-4	A set of models that improve on GPT-3.5 and can understand and generate natural language and code.
GPT-3.5	A set of models that improve on GPT-3 and can understand and generate natural language and code.
Embeddings	A set of models that can convert text into numerical vector form to facilitate text similarity.
DALL-E	A series of models that can generate original images from natural language.
Whisper	A series of models in preview that can transcribe and translate speech to text.
Text to speech (Preview)	A series of models in preview that can synthesize text to speech.

As of February 2025, accessing the GPT-o1 series requires submitting an access request.



Approved after a while

In my case...

- o1-preview and o1-mini are approved immediately.
- o1 is approved 18 days after the request.



One Microsoft

Welcome to the Azure OpenAl Service o1-

preview and o1-mini models! You are on the

waitlist for the o1 general availability model

[ApplicationID 2895374] 外部 受信トレイ×

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Evaluation Stored	Deployment type Global Standard	Created on 2025-04-08T06:38:31.2586957Z		can be found on the Deployments + Endpoint page	
completions	Created by	Modified on	To create a client with the OpenAl S you to authenticate and interact wi	SDK using an API key, initialize the client by passin ith OpenAI's services seamlessly:	ng your API key to the SDK's configura
Batch jobs	1923306880@utac.u-tokyo.ac.jp	Apr 8, 2025 3:38 PM		· ·	
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Q Vector stores manual	Life cycle status	Date created	Install the Azure Open AI SDK using	g pip (Requires: Python >=3.8):	
	GenerallyAvailable	Dec 3, 2024 9:00 AM	nin install openai		

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3. Run chat sessions using the "Chat Playground"

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Seployments	Rate limit (Tokens per minute) 250,000	Rate limit (Requests per minute) 1,500	<pre>api_version="2024-12-01-preview", endpoint="https://gpt-4o-test-1-2.openai.azure.com/", credential=AzureKeyCredential("<api_key>"))</api_key></pre>				
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4. How to use the service via Web API from your code

I want to send a prompt to the model and receive the response via Web API from a Google Colaboratory notebook?

Sample Code for Google Colaboratory

- Please log in with your ECCS account and open this in Colab.
- If you want to save your own copy, click "Copy to Drive" to save it to your Google Drive.
- Then, edit the following section under "2. Set Parameters".





from openai import AzureOpenAI

```
client = AzureOpenAI(
    azure_endpoint = os.getenv("AZURE_OPENAI_ENDPOINT"),
    api_key = os.getenv("AZURE_OPENAI_KEY"),
    api_version="2024-12-01-preview",
                                                   Set the context and
response = client.chat.completions.create(
                                                   user query.
    model=os.getenv("AZURE_OPENAI_MODEL"),
    messages=
       {"role" "system", "content": "You are an Azure expert. Ple
        {"role": "user", "content": "I would like to access a GPT-4
    ],
    max_tokens=800,
    temperature=0.7,
    top p=0.95,
    frequency_penalty=0,
    presence_penalty=0,
    stop=None,
    stream=False
```

print(response.choices[0].message.content)

🕣 Accessing a GPT-4 model deployed on Azure OpenAI Service from a notebook running on Google Col

Step 1: Set Up Your Azure OpenAI Service

- 1. **Create an Azure OpenAI Service**:
 - Log in to the [Azure Portal](<u>https://portal.azure.com/</u>).
 - Navigate to the Azure OpenAI Service and create a resource.
 - Deploy the GPT-4 model in your Azure OpenAI resource. (Ensure you' ve deployed the desire
- 2. **Get Endpoint and API Key**:
 - After deploying the model, go to the resource in Azure.
 - Note the **endpoint** URL and retrieve the **API key** from the "Keys and Endpoint" secti

Step 2: Set Up Google Colab

- 1. **Open a New Notebook**:
 - Go to [Google Colab](<u>https://colab.research.google.com/</u>) and create a new notebook.
- 2. **Install Required Libraries**:
 - Install the `requests` library (if not already installed) for making HTTP requests to the ``python
 - !pip install requests

5. Other Topics

5.1 Pricing

Estimating the Cost

Azure OpenAl Service pricing (see here)

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	To help customers in the journey, we offe	r pricing and cost management s	olutions to meet your needs. i	ncluding:	
	• Standard (On-Demand): Pay-as-you-g	o for input and output tokens.			
	 Provisioned (PTUs): <u>Allocate through</u> reduce overall spend. 	out with predictable costs, with m	onthly and annual reservation	s available to	
	Batch API: Language models are also returns completions within 24 hours fo			e regions, that	les

OpenAl GPT Pricing

GPT-4o

GPT-40 is the most advanced multimodal model that's faster and cheaper than GPT-4 Turbo with stronger vision capabilities. The model has 128K context and an October 2023 knowledge cutoff.

Model	Pricing (1M Tokens)	Pricing with Batch API (1M Tokens)
GPT-4o-2024-1120 Global	Input: ¥393.88751 Cached Input: ¥196.9438 Output: ¥1,575.5501	Input: ¥196.94376 Output: ¥787.7751

о1

o1 is the new reasoning model series for complex tasks. The model has 200K context and an October 2023 knowledge cutoff.

Model	Pricing (1M Tokens)
o1 1217 Global	Input: ¥2,363.3251 Cached Input: ¥1,181.6626 Output: ¥9,453.300060

OpenAl GPT Pricing

- The cost is determined by the number of tokens in both the **input** and **output**.
- To check the number of tokens in OpenAI, you can use the **web-based tokenizer**.
- In English, approximately 100 tokens ≈ 75 words, but low-frequency words may require more tokens.
- Since Japanese is recognized a low-frequency language in the tokenizer's vocabulary, it generally results in significantly more tokens than English for the same amount of text.





5.2 Token Limit per Minute

Azure OpenAI Service has quota limits

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Data files Vector Stores	····	Model availability across regions and

Request a quota increase

- Quota Increase Request Form
- Provide your full name, email address, organization name, and the type and size of the quota you are requesting.
- Include a justification explaining why you are requesting a quota increase.
- Since it is a manual review process, it may take several days for approval, so be sure to submit your request early.

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Microsoft Azure

Azure OpenAl Service: Request for Quota Increase

This form is used to submit requests for quota increases in quota for the standard deployment type. Quota increase requests are being accepted and will be filled in the order they are received. Priority will be given to customers who generate traffic that consumes the existing quota allocation, and your request may be denied if this condition is not met.

* 必須

Read the instructions carefully and answer each question completely before submitting the request

Use this form to request an increase due to your forecasted usage for Azure OpenAI Service. Microsoft will use the information you provide to assess your usage volume and patterns, allowing us to allocate the necessary GPU capacity to support your work. We will make every effort to accommodate your request; however, allocation is based on our current capacity and future deployments, and is subject to availability.

Please Note: For Microsoft personnel, do not fill out this form. Find more information here.

1. First Name * Enter your first name.

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5.3 Data, Privacy, and Security

Will the data be used for Azure or OpenAI?

Data, privacy, and security for Azure OpenAl Service -Azure Al services | Microsoft Learn

Your prompts (inputs) and completions (outputs), your embeddings, and your training data:

- are NOT available to other customers.
- are NOT available to OpenAI.
- are NOT used to improve OpenAI models.
- are NOT used to train, retrain, or improve Azure OpenAI Service foundation models.
- are NOT used to improve any Microsoft or 3rd party products or services without your permission or instruction.
- Your fine-tuned Azure OpenAI models are available exclusively for your use. The Azure OpenAI Service is operated by Microsoft as an Azure service; Microsoft hosts the OpenAI models in Microsoft's Azure environment and the Service does NOT interact with any services operated by OpenAI (e.g. ChatGPT, or the OpenAI API).

Purpose

- Two Options for Using Pretrained Models
 - Azure OpenAI Service: For immediate access to OpenAI models
 - Azure AI Foundry: For access to various models including OpenAI
- Roadmap for Azure OpenAI Service
 - 1. Create a resource group
 - 2. Select a model from the model catalog (e.g., choose "gpt-4o")
 - 3. Run chat sessions using the "Chat Playground"
 - 4. Use the service via Web API from your code **Additional Topics**
 - 5.1 Pricing5.2 Token limits per minute5.3 Data, privacy, and security

Using Other Pretrained Models (via Azure AI Foundry)

Example: DeepSeek R1

Get started with DeepSeek

If you want to use a model other than OpenAI, use AI Foundry

List of models as of February 2025

See <u>here</u> for the latest version

company	model	type
AI21 Labs	Al21-Jamba-1.5-Mini, Al21-Jamba-1.5-Large	chat-completion
Azure OpenAl	o3-mini, o1, o1-preview, o1-mini, gpt-4o, gpt-4o-mini	chat-completion
Azure OpenAl	gpt-4o-realtime-preview	real-time
Azure OpenAl	text-embedding-3-large, text-embedding-3-small	embeddings
Cohere	Cohere-embed-v3-english, Cohere-embed-v3-multilingual	embeddings
Cohere	Cohere-command-r-plus-08-2024, Cohere-command-r-08-2024, Cohere-command-r-plus, Cohere-command-r	chat-completion
Core42	jais-30b-chat Open Source Version	chat-completion
DeepSeek	DeepSeek-R1	chat-completion
Meta	Llama-3.3-70B-Instruct, Llama-3.2-11B-Vision-Instruct, Llama-3.2-90B-Vision-Instruct, Meta- Llama-3.1-405B-Instruct, Meta-Llama-3.1-8B-Instruct, Meta-Llama-3.1-70B-Instruct, Meta- Llama-3-8B-Instruct, Meta-Llama-3-70B-Instruct	chat-completion
Microsoft	Phi-3-mini-128k-instruct, Phi-3-mini-4k-instruct, Phi-3-small-8k-instruct, Phi-3-medium-128k- instruct, Phi-3-medium-4k-instruct, Phi-3.5-vision-instruct, Phi-3.5-MoE-instruct, Phi-3-small- 128k-instruct, Phi-3.5-mini-instruct, Phi-4	chat-completion
Mistral AI	Ministral-3B, Mistral-large, Mistral-small, Mistral-Nemo, Mistral-large-2407, Mistral-Large- 2411, Codestral-2501	chat-completion
NTT Data	Tsuzumi-7b	chat-completion

1. Create a Hub and a Project









Create

Next >





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Home > Microsoft.MachineLearningServ	ices Overview >		
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	🕂 Create project 🞍 Download config.json 🛅 Delete		
🤌 Overview			JSON View
Activity log	Resource group	Project resource group (default)	
Access control (IAM)	<u>AI-Foundary-hub0</u>	<u>Al-Foundary-hub0</u>	
🇳 Tags	Location	Storage	
💥 Diagnose and solve problems	East US 2	aifoundarytest6713422946	
🛧 Resource visualizer	Subscription	Container Registry (edit)	
🗲 Events	<u>1923306880-YamakataTraining</u> Subscription ID	 Application Insights (edit)	
> Settings	a600356d-63a3-483e-b4bb-59629c01a212		
> Monitoring	Key Vault	Provisioning State	
> Automation	aifoundarytest4278903108	Succeeded	

Govern the environment for your team in AI Foundry

Your Azure AI hub provides enterpise-grade security, and a collaborative environment to build AI solutions. Centrally audit usage and cost, and set up connections to your company resources that all projects can use. learn more about the Azure AI Foundry P

> Support + troubleshooting







2. Select a model from the model catalog





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Build and customize			p training process, such as language, s	scientific reasoning, and coding	Quick facts	D
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Prompt flow	but had issues like hard-to-read	d outputs and language inco	onsistencies. To address these limitatic ing pipeline that blends reasoning-ori	ons, DeepSeek-R1 incorporates a	Last trained Not available	
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3. Run a chat from the chat playground

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Key	Get Started		
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Compute type	SDR, see full documentation		
Consumption	1. Authentication usin	g API Key	
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