TEAMCENTER

Teamcenter AI Services – Azure Infrastructure Setup

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This document provides steps to set up these Azure services:

Azure OpenAI Service Setup

Provides access to OpenAI LLMs and embedding models.

Azure AI Search Service Setup

Acts as the vector database for storing and querying large amounts of data efficiently.

Create Vector Index for Azure Search Service

Provides index that allows you to store embedded documents and access them at your leisure.

Section 1:
Azure OpenAI Service Setup

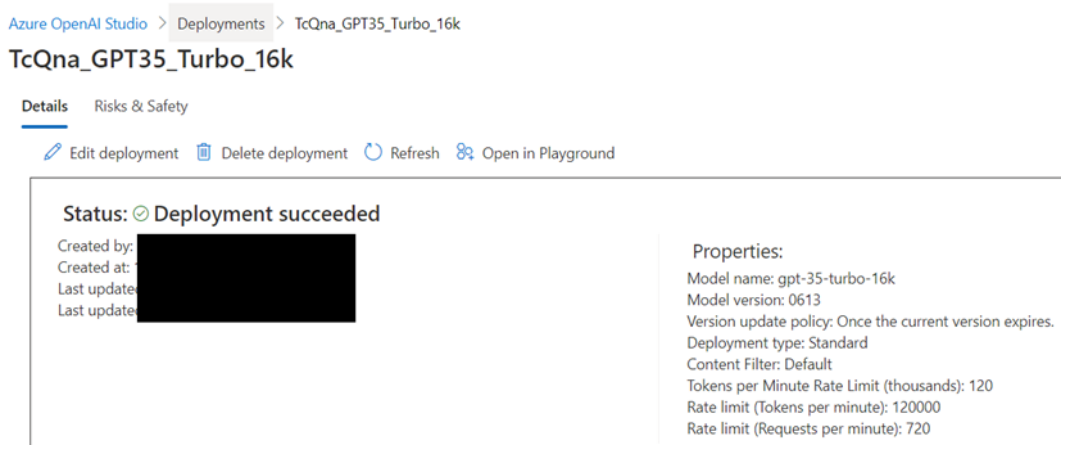
1. Log into the Azure Portal and navigate to **Azure OpenAI Service**.
2. Create a new Azure Open AI service instance.
3. Choose an appropriate pricing tier and region that meets your application requirements.
4. Record the endpoints and keys:

   This information is used by Teamcenter AI Services to interact with OpenAI models.

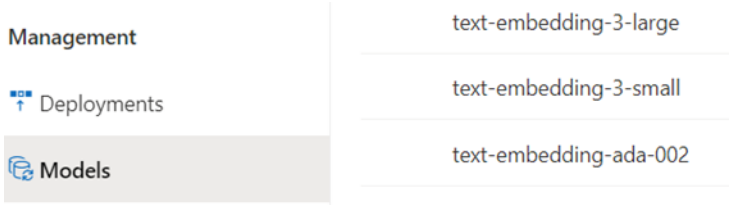
5. Navigate to **Model Deployments** and select **Manage Deployments** under this service to deploy and manage your models required for Teamcenter AI Services.

   - **LLM Model:**

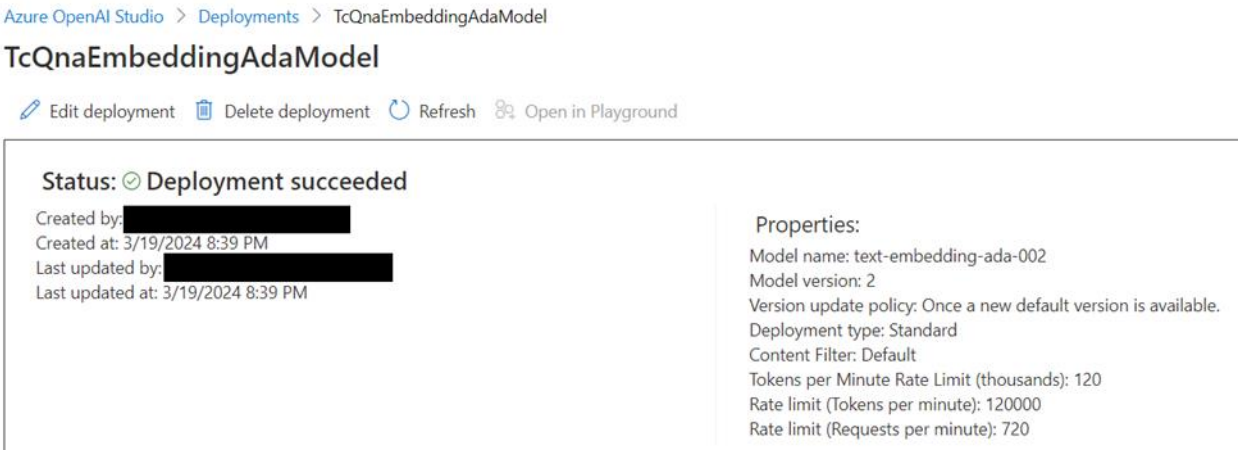
     - You can deploy any of the available OpenAI models. Teamcenter AI Services has been tested with **gpt-35-turbo-16k** model.
     - Once the deployment is complete, record the deployment name. TC AI Services uses the deployment name to interact with the model.



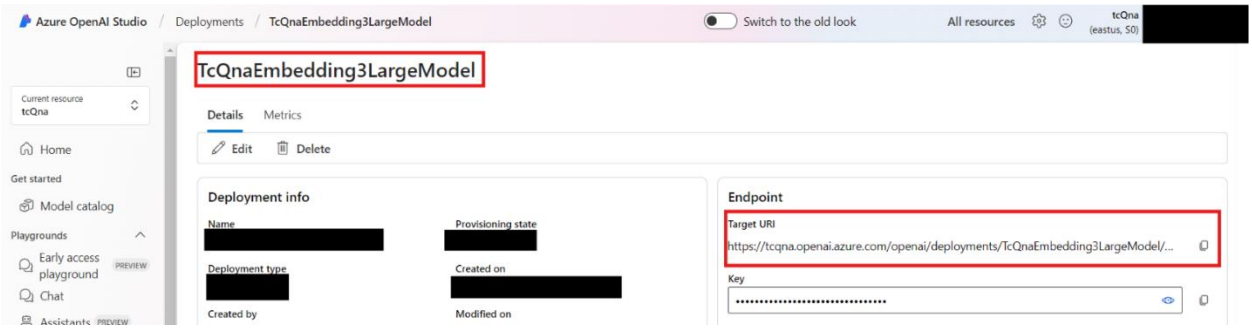
- **Embedding Model:**
    - You can use any of the available OpenAI Embedding models for Teamcenter AI Services.
    - Record the deployment name for the embedding model as well. This is required for Teamcenter AI Services.



Example: text-embedding-ada-002 deployed in Azure West US region with name **TcQnaEmbeddingAdaModel**:



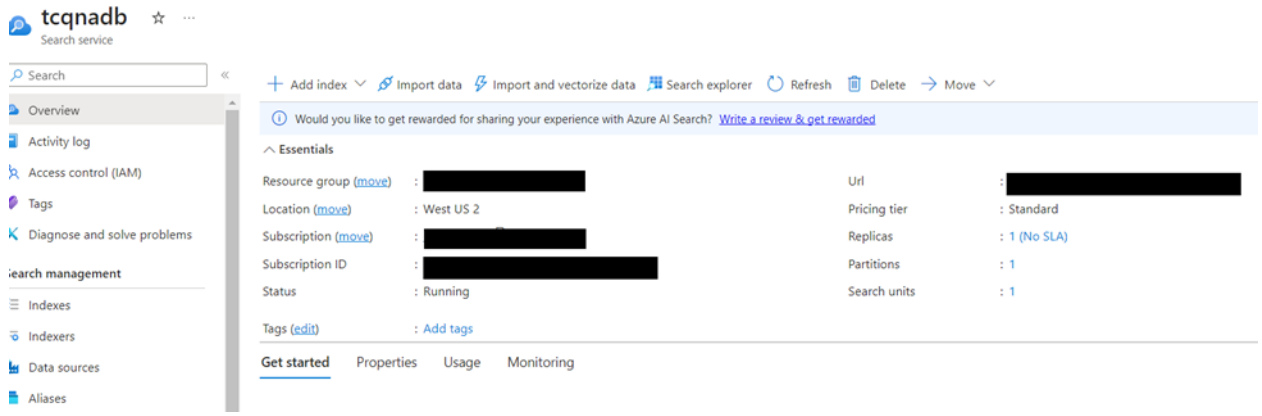
6. The API Version is listed at the end of the Endpoint URI.
   Note: This Endpoint URI is not the endpoint that you will provide during Deployment Center installation. The endpoint you will provide only contains the host URL, through **.com/** It will list a date, potentially with the word “preview” following the date. The **Model Name** is the name you specifically provided as shown:



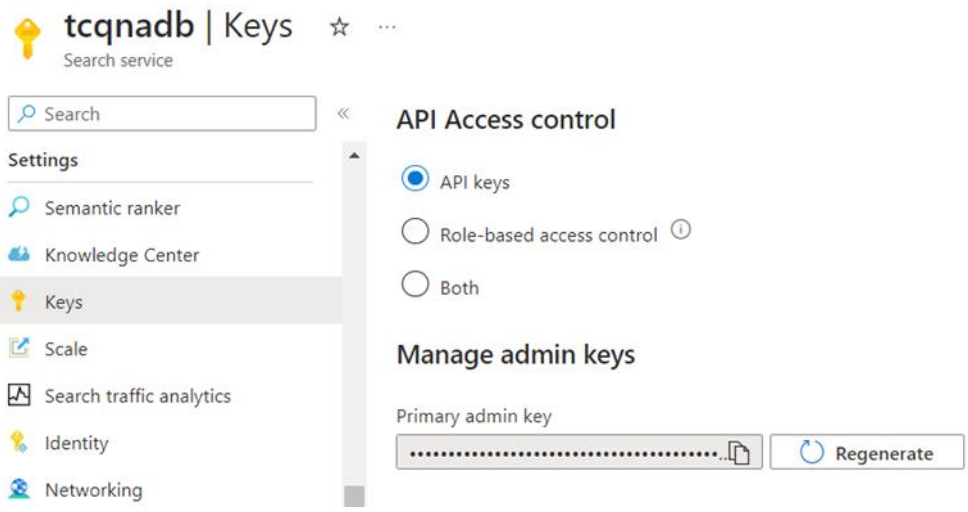
Section 2:
Azure AI Search Service Setup

1. Log into the Azure Portal and navigate to **AI Search Service**.
2. Create a new search service instance:
    a. Choose an appropriate pricing tier and region that meets your application requirements.
    b. Configure the instance with the necessary scalability and performance settings.
3. Record the service URL, which is used by your application to interact with the search service.
4. Record API keys for API access:
    a. Go to **Settings > Keys**.
    b. Create admin keys and record them for later.

    Example: Azure AI Search service named "**tcqnadb**" deployed on West US region:

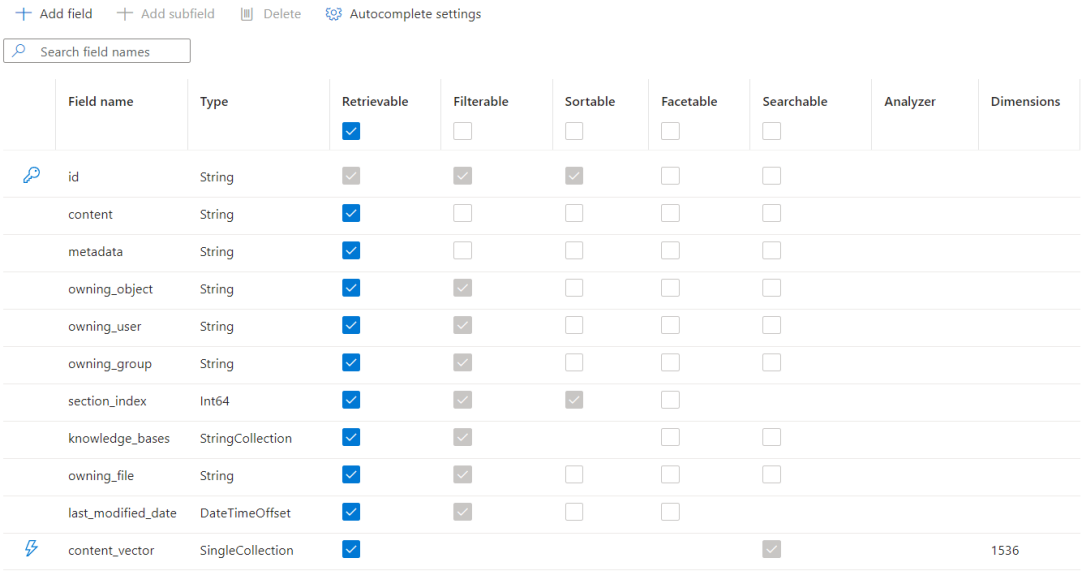


c. API Keys Generation:



Section 3: Create Vector Index for your Azure Search Service

1. Under **Search management**, click **Indexes.**
2. Click **Add index.**
    a. Enter your unique **Index Name**.
    b. Add the following fields and fill them in according to the field.
    Hint: Use Edm types if applicable such as **Edm.string.**



Field name	Type	Retrievable	Filterable	Sortable	Facetable	Searchable	Analyzer	Dimensions
id	String	☑	☑	☑	☐	☐		
content	String	☑	☐	☐	☐	☐		
metadata	String	☑	☐	☐	☐	☐		
owning_object	String	☑	☑	☐	☐	☐		
owning_user	String	☑	☑	☐	☐	☐		
owning_group	String	☑	☑	☐	☐	☐		
section_index	Int64	☑	☑	☑	☐			
knowledge_bases	StringCollection	☑	☑		☐	☐		
owning_file	String	☑	☑	☐	☐	☐		
last_modified_date	DateTimeOffset	☑	☑	☐	☐			
content_vector	SingleCollection	☑				☑		1536

    c. For **content_vector**, use the Collection Type (Edm.Single) and fill out the following attributes:
        i. Dimensions: 1536
        ii. Create Vector Search Profile
        iii. Create Algorithm Configuration
            1. **Kind**: hnsw
            2. **m:** 10
            3. **efConstruction:** 512

4. **efSearch:** 500
5. **metric:** cosine

d. Click **Create**.

3. Now you have a vector index for the documents that you wish to embed. You will need to save the name of your index for Deployment Center configuration.

Install and Configure Teamcenter AI Services

You must now install Teamcenter AI Microservices and configure the applicable AI features.

For detailed steps regarding the installation of Teamcenter AI Microservices in Deployment Center, please refer to *Teamcenter Installation Using Deployment Center* on Support Center.

For detailed steps regarding the configuration of Teamcenter AI Chat and Natural Language Search, please refer to *Data Indexing and Search Configuration* on Support Center.

References:

https://github.com/Azure-Samples/openai-end-to-end-baseline