Overview

Casibase is an open-source Domain Knowledge Database & IM & Forum Software powered by ChatGPT.

You need to enable JavaScript to run this app.

Casibase features

1. With a separate front-end and back-end architecture developed in Golang, Casibase supports high concurrency, provides web-based management UI and supports multiple languages (Chinese, English).

2. Casibase supports third-party application login, such as GitHub, Google, QQ, WeChat, etc., and supports the extension of third-party login with plugins.

3. Based on embedding and prompt engineering for knowledge management, Casibase supports customized embedding methods and language models.

4. Casibase supports integration with existing systems by db sync, so users can transition to Casibase smoothly.

5. Casibase supports mainstream databases: MySQL, PostgreSQL, SQL Server, etc., and supports the extension of new databases with plugins.

6. Casibase is a powerful tool for asset management, enabling easy connection to assets via RDP, VNC, and SSH protocols and efficient handling of remote connections to machines.

7. Casibase's Security Log Auditing feature allows you to effortlessly track and monitor remote connections with detailed audit logging, recording connection start time, duration, and other relevant details, and also enables you to capture and analyze API logs for Casdoor operations, enhancing security and operational transparency.

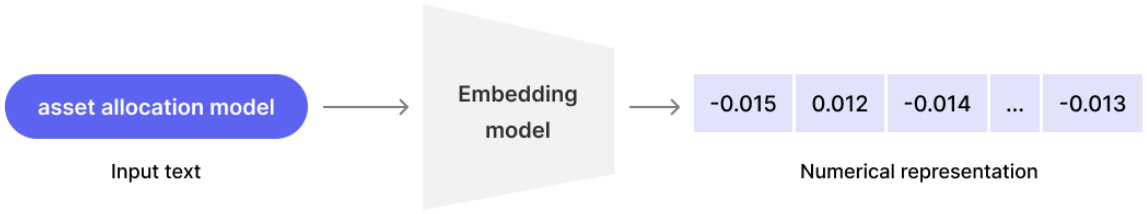
8. Casibase supports database management. Casibase's Database Management feature allows you to easily connect, manage, and organize databases while controlling access and simplifying user management and authorization for

database resources.

How it works

Step 0 (Pre-knowledge)

Casibase's knowledge retrieval process is based on embedding and prompt engineering, so it is highly recommended that you take a brief look at how embedding works. An introduction to Embedding.



Step 1 (Importing Knowledge)

To get started with Casibase, users need to follow these steps to import knowledge and create a domain-specific knowledge database:

1. Configure Storage: In the Casibase dashboard, users should first configure the storage settings. This involves specifying the storage system to be used for storing knowledge-related files, such as documents, images, or any other relevant data. Users can choose from a variety of storage options based on their preferences and requirements.

2. Upload Files to Storage: Once the storage is set up, users can proceed to upload files containing domain-specific knowledge into the configured

storage system. These files can be in various formats, such as text documents, images, or structured data files like CSV or JSON.

3. Select Embedding Method for Knowledge Generation: After the files are uploaded, users have the option to choose the embedding method for generating knowledge and corresponding vectors. Embeddings are numerical representations of textual or visual content, which facilitate efficient similarity search and data analysis.

> TIP
>
> How knowledge is embedded?
>
> - For textual data: Users can choose from various embedding methods, such as Word2Vec, GloVe, or BERT, to convert the textual knowledge into meaningful vectors.
> - For visual data: If the uploaded files contain images or visual content, users can select image embedding techniques like CNN-based feature extraction to create representative vectors.
> - More methods coming soon...

By following these steps, users can populate their domain knowledge database with relevant information and corresponding embeddings, which will be used for effective searching, clustering, and retrieval of knowledge within Casibase. The embedding process allows the system to understand the context and relationships between different pieces of knowledge, enabling more efficient and insightful knowledge management and exploration.

Step 2 (Retrieving Knowledge)

After importing your `domain knowledge`, Casibase transforms it into `vectors` and stores these vectors in a `vector database`. This vector representation enables powerful functions like `similarity search` and `efficient retrieval of related information`. You can quickly find relevant data based on context or content, enabling advanced querying and uncovering valuable insights within your domain knowledge.

Step 3 (Building the Prompt)

Casibase performs a similarity search on the stored knowledge vectors to find the closest match to the user's query. Using the search results, it creates a `prompt template` to frame a specific question for the `language model`. This ensures accurate and contextually relevant responses, delivering comprehensive answers based on the domain knowledge in Casibase.

Step 4 (Achieving the Goal)

At this stage, using Casibase, you have successfully acquired the knowledge you sought. Through the innovative combination of domain knowledge transformed into vectors and powerful language models like ChatGPT, Casibase provides you with accurate and relevant responses to your inquiries. This enables you to efficiently access and utilize the domain-specific information stored in Casibase, meeting your knowledge requirements with ease.

Step 5 (Optional Fine-tuning)

If you find that the results are not entirely satisfactory, you can try to get better results by doing the following:

- Tweaking Language Model Parameters
- Asking multiple questions
- Optimizing the original files

By utilizing these fine-tuning options, you can improve the efficiency of your knowledge management in Casibase, ensure that the system is better aligned with your goals, and provide more accurate and insightful information.

> HINTS
>
> Other ways to optimize results (may require source code changes):
>
> - Updating `Embedding` Results: Refine the knowledge representation by adjusting the embedding results of your domain knowledge.
> - Modifying `Prompt` Templates: By customizing the prompts, you can elicit more precise responses from the language model.
> - Exploring Different `Language Models`: Experiment with different models to find the one that best suits your requirements for generating responses.

Online demo

Read-only site (any modification operation will fail)

- Chat bot (https://ai.casibase.com)
- Admin UI (https://ai-admin.casibase.com)

Writable site (original data will be restored for every 5 minutes)

- Chat bot (https://demo.casibase.com)
- Admin UI (https://demo-admin.casibase.com)

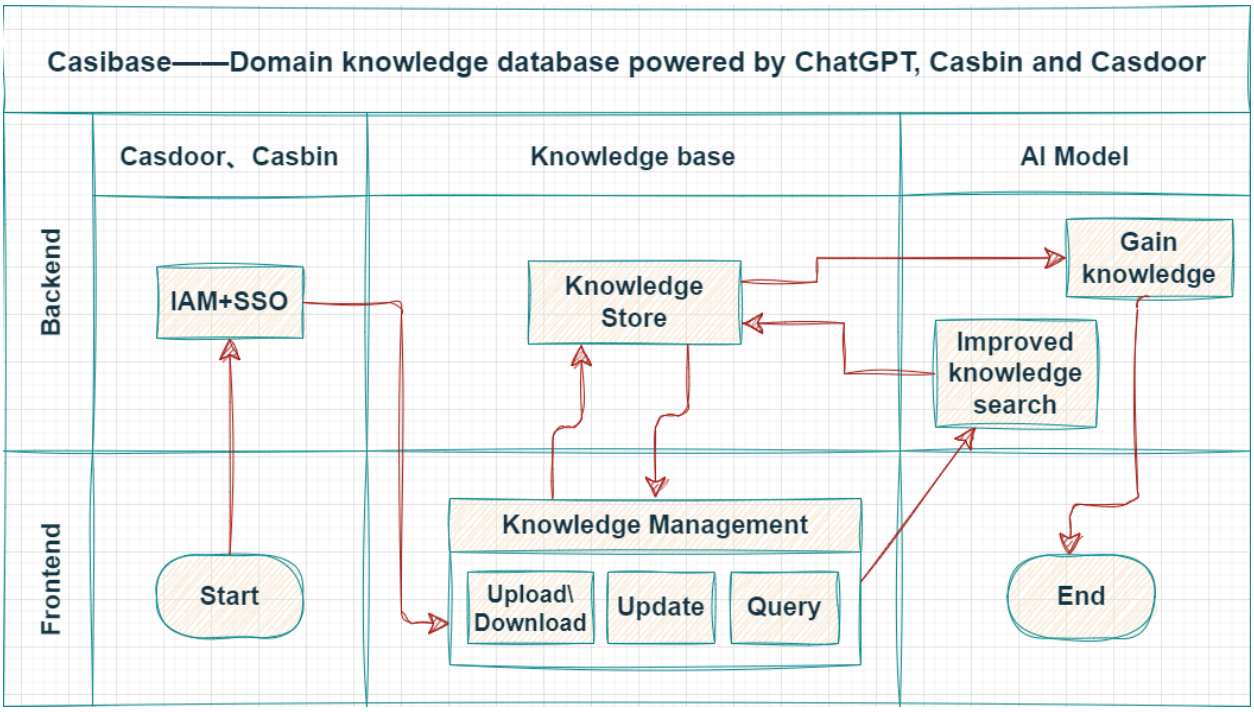
Global admin login:

- Username: `admin`
- Password: `123`

Architecture

Casibase contains 2 parts:

Name	Description	Language	Source code
Frontend	User interface for the casibase application	JavaScript + React	https://github.com/casibase/casibase/tree/master/web
Backend	Server-side logic and API for casibase	Golang + Beego + MySQL	https://github.com/casibase/casibase



Supported Models

Language Model

Model	Sub Type	Link
OpenAI	gpt-4-32k-0613◈gpt-4-32k-0314◈gpt-4-32k◈ gpt-4-0613◈gpt-4-0314◈gpt-4◈ gpt-3.5-turbo-0613◈gpt-3.5-turbo-0301◈ gpt-3.5-turbo-16k◈gpt-3.5-turbo-16k-0613◈ gpt-3.5-turbo◈text-davinci-003◈text-davinci-002◈text-curie-001◈text-babbage-001◈text-ada-001◈text-davinci-001◈davinci-instruct-beta◈davinci◈ curie-instruct-beta◈curie◈ada◈babbage	OpenAI

Model	Sub Type	Link
Hugging Face	meta-llama/Llama-2-7b, tiiuae/falcon-180B, bigscience/bloom, gpt2, baichuan-inc/Baichuan2-13B-Chat, THUDM/chatglm2-6b	Hugging Face
Claude	claude-2, claude-v1, claude-v1-100k, claude-instant-v1, claude-instant-v1-100k, claude-v1.3, claude-v1.3-100k, claude-v1.2, claude-v1.0, claude-instant-v1.1, claude-instant-v1.1-100k, claude-instant-v1.0	Claude
OpenRouter	google/palm-2-codechat-bison, google/palm-2-chat-bison, openai/gpt-3.5-turbo, openai/gpt-3.5-turbo-16k, openai/gpt-4, openai/gpt-4-32k, anthropic/claude-2, anthropic/claude-instant-v1, meta-llama/llama-2-13b-chat, meta-llama/llama-2-70b-chat, palm-2-codechat-bison, palm-2-chat-bison, gpt-3.5-turbo, gpt-3.5-turbo-16k, gpt-4, gpt-4-32k, claude-2, claude-instant-v1, llama-2-13b-chat, llama-2-70b-chat	OpenRouter
Ernie	ERNIE-Bot, ERNIE-Bot-turbo, BLOOMZ-7B, Llama-2	Ernie
iFlytek	spark-v1.5, spark-v2.0	iFlytek
ChatGLM	chatglm2-6b	ChatGLM

Model	Sub Type	Link
MiniMax	abab5-chat	MiniMax
Local	custom-model	Local Computer

Embedding Model

Model	Sub Type	Link
OpenAI	AdaSimilarity, BabbageSimilarity, CurieSimilarity, DavinciSimilarity, AdaSearchDocument, AdaSearchQuery, BabbageSearchDocument, BabbageSearchQuery, CurieSearchDocument, CurieSearchQuery, DavinciSearchDocument, DavinciSearchQuery, AdaCodeSearchCode, AdaCodeSearchText, BabbageCodeSearchCode, BabbageCodeSearchText, AdaEmbeddingV2	OpenAI
Hugging Face	sentence-transformers/all-MiniLM-L6-v2	Hugging Face
Cohere	embed-english-v2.0, embed-english-light-v2.0, embed-multilingual-v2.0	Cohere
Ernie	default	Ernie
Local	custom-embedding	Local Computer

Core Concepts

As Casibase's user, you should get familiar with at least 4 core concepts: `Provider`, `Storage`, `Chat` and `Vector`.

Providers

Providers are the backbone of Casibase, offering essential services and integration with external systems. The Provider class definition is shown as follows:

```
type Provider struct {
    Owner       string `xorm:"varchar(100) notnull pk"
json:"owner"`
    Name        string `xorm:"varchar(100) notnull pk" json:"name"`
    CreatedTime string `xorm:"varchar(100)" json:"createdTime"`

    DisplayName  string `xorm:"varchar(100)" json:"displayName"`
    Category     string `xorm:"varchar(100)" json:"category"`
    Type         string `xorm:"varchar(100)" json:"type"`
    ClientId     string `xorm:"varchar(100)" json:"clientId"`
    ClientSecret string `xorm:"varchar(2000)" json:"clientSecret"`
    ProviderUrl  string `xorm:"varchar(200)" json:"providerUrl"`
}
```

> TIP
>
> There are two primary types of providers in Casibase:
>
> - Storage Providers. The Storage Providers facilitates the storage and

retrieval of data within Casibase. It supports various storage options, including:

  - AWS
  - Azure
  - Local File System

- **AI Providers.** The AI Providers are responsible for handling AI-related tasks and services in Casibase. It supports multiple AI models and technologies, including:

  - OpenAI
  - ChatGLM
  - InternLM

Vectors

Vectors in Casibase represent numerical representations of different types of data. These vectors enable efficient processing and analysis of information. Some of the vector types available are:

- Text Vector
- Image Vector
- ... (other vector types)

The Vector class definition is shown as follows:

```
type Vector struct {
    Owner       string    `xorm:"varchar(100) notnull pk"
```

Chats

Chats are at the core of interactive communication between users and the AI models in Casibase. They consist of three essential components:

- Question: The user's input or query, seeking information or assistance.
- Query Prompt: A formatted version of the user's question, prepared for processing by the AI models.
- Answer: The AI-generated response to the user's question, providing relevant information or solutions.

The Chat class definition is shown as follows:

```
type Chat struct {
    Owner        string   `xorm:"varchar(100) notnull pk"
json:"owner"`
    Name         string   `xorm:"varchar(100) notnull pk"
json:"name"`
    CreatedTime  string   `xorm:"varchar(100)" json:"createdTime"`
    UpdatedTime  string   `xorm:"varchar(100)" json:"updatedTime"`

    DisplayName  string   `xorm:"varchar(100)" json:"displayName"`
    Category     string   `xorm:"varchar(100)" json:"category"`
    Type         string   `xorm:"varchar(100)" json:"type"`
    User1        string   `xorm:"varchar(100)" json:"user1"`
    User2        string   `xorm:"varchar(100)" json:"user2"`
    Users        []string `xorm:"varchar(100)" json:"users"`
    MessageCount int      `json:"messageCount"`
}
```

Embedding

Embedding is the process of transforming various types of data, such as text and images, into dense vector representations. This step is crucial for facilitating efficient data processing and analysis within Casibase.

TIP

- By embedding, the questions in chat and the knowledge files in storage will be turned into vectors and used in the next step of knowledge search.
- Casibase's default embedding method is provided by OpenAI at a rate of up to three calls per minute. We recommend minimizing coupling between knowledge files to facilitate embedding and further processing.

Server Installation

Requirements

OS

All major operating systems including Windows, Linux and macOS are supported.

Environment

- Go 1.20+
- Node.js LTS (18)
- Yarn 1.x

> INFO
>
> The use of Casibase is divided into two steps:
>
> - step1: Deploy and run Casdoor
> - step2: Deploy and run Casibase (this docs)
>
> We strongly suggest you use Yarn 1.x to run & build Casdoor&Casibase frontend, using NPM might cause UI styling issues, see more details at: casdoor#294

> CAUTION
>
> For **Chinese** users, in order to download the Go dependency packages successfully, you need to use a Go proxy by Configuring the GOPROXY environment variable. We strongly recommend: https://goproxy.cn/

Database

Casibase uses XORM to talk to the database. Based on Xorm Drivers Support, Casibase currently provides support for the following databases:

- `MySQL`
- `MariaDB`
- `PostgreSQL`
- `CockroachDB`
- `SQL Server`
- `Oracle`
- `SQLite 3`
- `TiDB`

guacd

Casibase uses guacamole-server to provide remote desktop access. If you want to use this feature, you need to install guacamole-server first. If you haven't installed guacamole-server, please refer to guacamole-server Installation.

You can also run guacd in docker with the following command:

```
docker run -d --name guacd -p 4822:4822 guacamole/guacd
```

Download

The source code of Casibase is hosted at GitHub: https://github.com/casibase/casibase. Both the Go backend code and React frontend code are inside the

single repository.

Name	Description	Language	Source code
Frontend	Web frontend UI for Casibase	JavaScript + React	https://github.com/casibase/casibase/tree/master/web
Backend	RESTful API backend for Casibase	Golang + Beego + XORM	https://github.com/casibase/casibase

Casibase supports `Go Modules`. To download the code, you can just simply clone the code via git:

```
cd path/to/folder
git clone https://github.com/casibase/casibase
```

Configuration

Configure Casdoor

Please refer to Casdoor-SSO section to configure Casdoor.

Remember your `clientId`, `clientSecret`, `organization`, `application` and so on in Casdoor configuration, we will use them later.

Configure Database

Casibase supports mysql, mssql, sqlite3, postgres. Casibase uses mysql by

default.

MySQL

Casibase will store its users, nodes and topics information in a MySQL database named: `casibase`. If the database does not exist, it needs to be created manually. The DB connection string can be specified at: https://github.com/casibase/casibase/blob/master/conf/app.conf

```
driverName = mysql
dataSourceName = root:123456@tcp(localhost:3306)/
dbName = casibase
```

PostgreSQL

Since we must choose a database when opening Postgres with xorm, you should prepare a database manually before running Casibase.

Let's assume that you have already prepared a database called `casibase`, then you should specify `app.conf` like this:

```
driverName = postgres
dataSourceName = "user=postgres password=postgres host=localhost
port=5432 sslmode=disable dbname=casibase"
dbName =
```

> INFO
>
> For PostgreSQL, make sure `dataSourceName` has non-empty `dbName` and leave the standalone `dbName` field empty like the above example.

CockroachDB

You can also use Cockroachdb with postgres driver. It has same configuration as postgreSQL.

```
driverName = postgres
dataSourceName = "user=postgres password=postgres host=localhost
port=5432 sslmode=disable dbname=casibase
serial_normalization=virtual_sequence"
dbName =
```

> INFO
>
> For CockroachDB, don't forget to add `serial_normalization=virtual_sequence` to the `dataSourceName` like the above example. otherwise you will get error regarding existed database, whenever the service starts or restarts. Notice, this must be added before the database created.

Sqlite3

You should specify `app.conf` like this:

```
driverName = sqlite
dataSourceName = "file:casibase.db?cache=shared"
dbName = casibase
```

Custom configuration

Casibase supports custom configuration, you can modify the configuration file `conf/app.conf` to change the configuration.

- Backend (conf/app.conf)

```
casdoorEndpoint = <Your Casdoor endpoint>
clientId = <Your Casdoor application's client ID>
clientSecret = <Your Casdoor application's client secret>
casdoorOrganization = <Your Casdoor organization name>
casdoorApplication = <Your Casdoor application name>
```

- Frontend (web/src/Conf.js)

```
serverUrl: "<Your Casdoor endpoint>"
clientId: "<Your Casdoor application's client ID>"
appName: "<Your Casdoor application name>"
organizationName: "<Your Casdoor organization name>"
```

Run

There are currently two methods to start, you can choose one according to your own situation.

> ⚠ CAUTION
>
> **Casibase** requires **Casdoor** to provide access control and some back-end services, so you must make sure **Casdoor** is running properly before running **Casibase**.
>
> How to install and run Casdoor:
>
> - Casdoor Installation

Development mode

Backend

Casibase's Go backend runs at port 14000 by default. You can start the Go backend with the following command:

```
go run main.go
```

After the server is successfully running, we can start the frontend part.

Frontend

Casibase's frontend is a very classic Create-React-App (CRA) project. It runs at port `13001` by default. Use the following commands to run the frontend:

```
cd web
yarn install
yarn start
```

Production mode

Backend

Build Casibase Go backend code into executable and start it.

For Linux:

```
go build
./casibase
```

For Windows:

```
go build
casibase.exe
```

Frontend

Build Casibase frontend code into static resources (.html, .js, .css files):

```
cd web
yarn install
yarn build
```

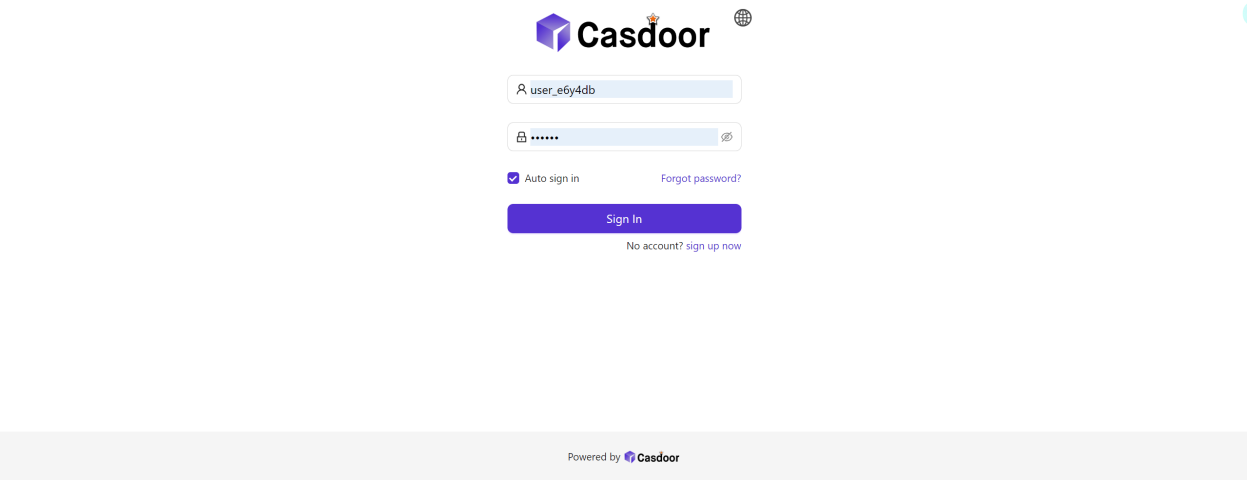
Nginx

> TIP
>
> If you use nginx as a reverse proxy, you need to add the following configuration to the nginx configuration file:
>
> ```
> location / {
>     *** your configuration ***
>     proxy_set_header Upgrade $http_upgrade;
>     proxy_set_header Connection "upgrade";
> }
> ```
>
> Because Casibase uses websocket to communicate with guacd.

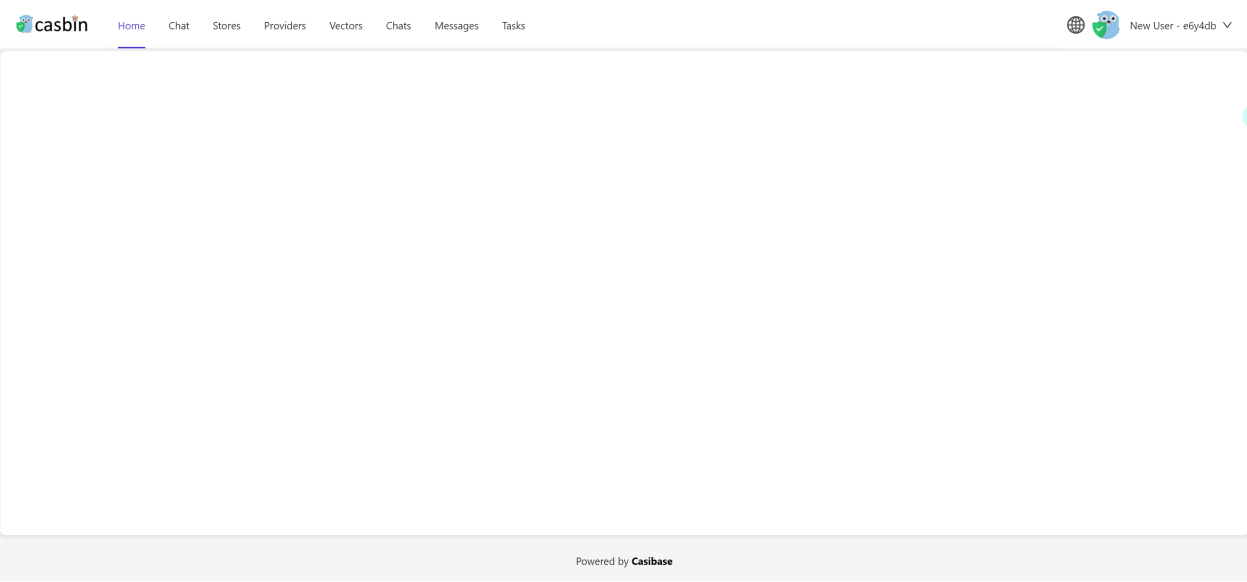
Preview

Visit: `http://localhost:13001` in your browser. Login into Casibase dashboard

with the user account you have just registered in Casdoor:



Then you will go to the home page of Casibase:



> **TIP**
>
> To use another port, please edit `conf/app.conf` and modify `httpport`, then restart the Go backend.

(Optional) Try with Docker

Requirements

Hardware

If you want to build the Docker image yourself, please ensure that your machine has at least **2GB** of memory. Casibase's frontend is an NPM project of React. Building the frontend requires at least **2GB** of memory. Having less than **2GB** of memory may result in a frontend build failure.

If you only need to run the pre-built image, please ensure that your machine has at least **100MB** of memory.

OS

All operating systems (Linux, Windows, and macOS) are supported.

Docker

You can use **Docker (docker-engine version >= 17.05)** in Linux or **Docker Desktop** in Windows and macOS.

- Docker

Regardless of the operating system, users must ensure that they have **docker-engine version >= 17.05**. This is because we utilize the multi-stage build feature in the docker-compose.yml, which is supported in versions 17.05 and above. For more information, see https://docs.docker.com/develop/develop-images/multistage-build/.

If you use docker-compose, please ensure you have **docker-compose version >= 2.2**. For Linux users, note that docker-compose needs to be installed separately from docker-engine.

Get the image

We have provided two DockerHub images:

Name	Description	Suggestion
casibase-all-in-one	Both Casibase and a MySQL database are included in the image	This image already includes a toy database and is only for testing purposes
casibase	Only Casibase is included in the image	This image can be connected to your own database and used in production

1. casbin/casibase-all-in-one: This image includes the casibase binary, a MySQL database, and all the necessary configurations. It is designed for new users who want to try Casibase quickly. With this image, you can start Casibase immediately with just one or two commands, without any complex configuration. However, please note that we **do not recommend** using this image in a production environment.

Option-1: Use the toy database

Run the container with port `14000` exposed to the host. The image will be automatically pulled if it doesn't exist on the local host.

```
docker run -p 14000:14000 casbin/casibase-all-in-one
```

Visit http://localhost:14000 in your browser. Log into the Casibase dashboard with the default global admin account: `built-in/admin`

```
admin
123
```

Option-2: Try with docker-compose

Create a `conf/app.conf` directory in the same directory level as the `docker-compose.yml` file. Then, copy app.conf from Casibase. For more details about `app.conf`, you can see Via Ini file.

Create a separate database using docker-compose:

```
docker-compose up
```

That's it! 🛩️

Visit http://localhost:14000 in your browser. Log into the Casibase dashboard with the default global admin account: `built-in/admin`

```
admin
123
```

Note: If you dig deeper into the docker-compose.yml file, you may be puzzled by the environment variable we created called "RUNNING_IN_DOCKER". When the database 'db' is created via docker-compose, it is available on your PC's localhost but not the localhost of the Casibase container. To prevent you from running into

troubles caused by modifying app.conf, which can be quite difficult for a new user, we provided this environment variable and pre-assigned it in the docker-compose.yml. When this environment variable is set to true, localhost will be replaced with host.docker.internal so that Casibase can access the database.

Option-3: Try directly with the standard image

> TIP
>
> If it is not convenient to mount the configuration file to a container, using environment variables is also a possible solution.
>
> example
>
> ```
> docker run \
>   -e driverName=mysql \
>   -e dataSourceName='user:password@tcp(x.x.x.x:3306)/' \
>   -p 14000:14000 \
>   casbin/casibase:latest
> ```

Create `conf/app.conf`. You can copy it from conf/app.conf in Casibase. For more details about `app.conf`, you can see Via Ini file.

Then run

```
docker run  -p 14000:14000 -v /folder/of/app.conf:/conf casbin/casibase:latest
```

Anyway, just **mount the app.conf to /conf/app.conf** and start the container.

Visit http://localhost:14000 in your browser. Log into the Casibase dashboard with the default global admin account: `built-in/admin`

```
admin
123
```

Beginner Guide

📄 Add a Storage Provider

Discover how to integrate a storage provider with Casibase.

📄 Add an AI Model Provider

Learn how to add a model provider to enhance Casibase functionality.

📄 Add an Embedding Provider

Explore how to integrate an embedding provider with Casibase.

📄 Add a Text-to-Speech Model Provider

Learn how to add a text-to-speech provider to enhance Casibase functionality.

Add a Speech-to-Text Provider

Learn how to add a speech-to-text provider to enhance Casibase functionality.

Add a Store

Learn how to add a store to your Casibase knowledge base system.

Chats with AI

Implement AI chat functionality in your Casibase knowledge base system.

Add a Storage Provider

This document is a step-by-step tutorial designed for beginners. It will guide you through the process of integrating a storage provider with Casibase, our powerful knowledge base system.

Introduction

Adding a storage provider to Casibase enables you to efficiently manage and store data, making it an essential component for your knowledge base system.

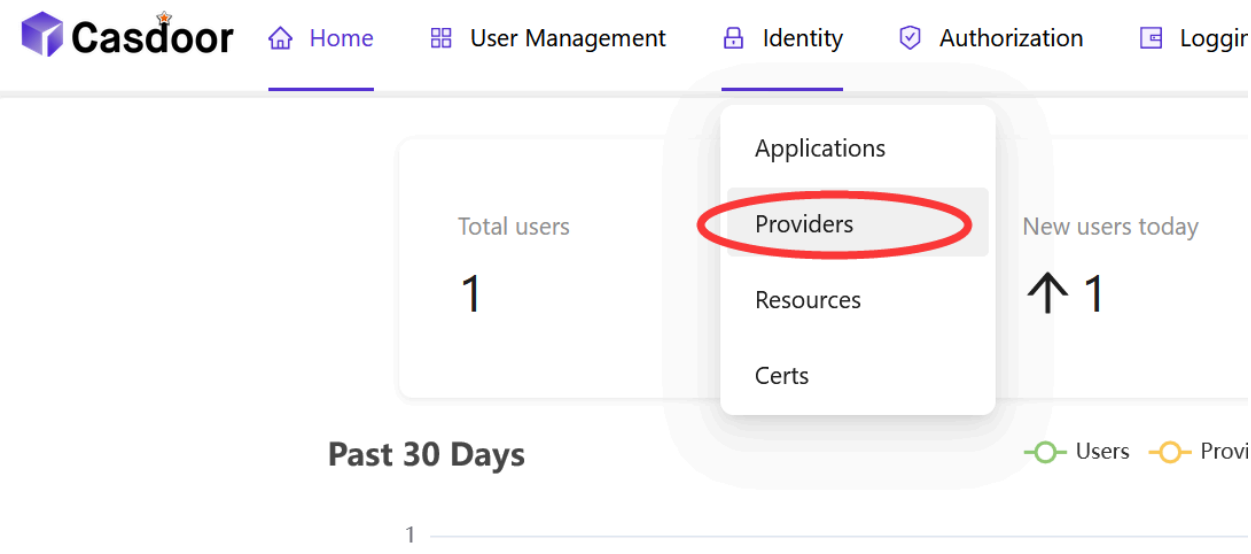
If you're new to integrating storage providers, don't worry. We've broken down the process into simple steps that anyone can follow.

Step 1: Deploy Casdoor and Casibase

If you haven't done, please refer to the Deploy Casdoor and Casibase tutorial.

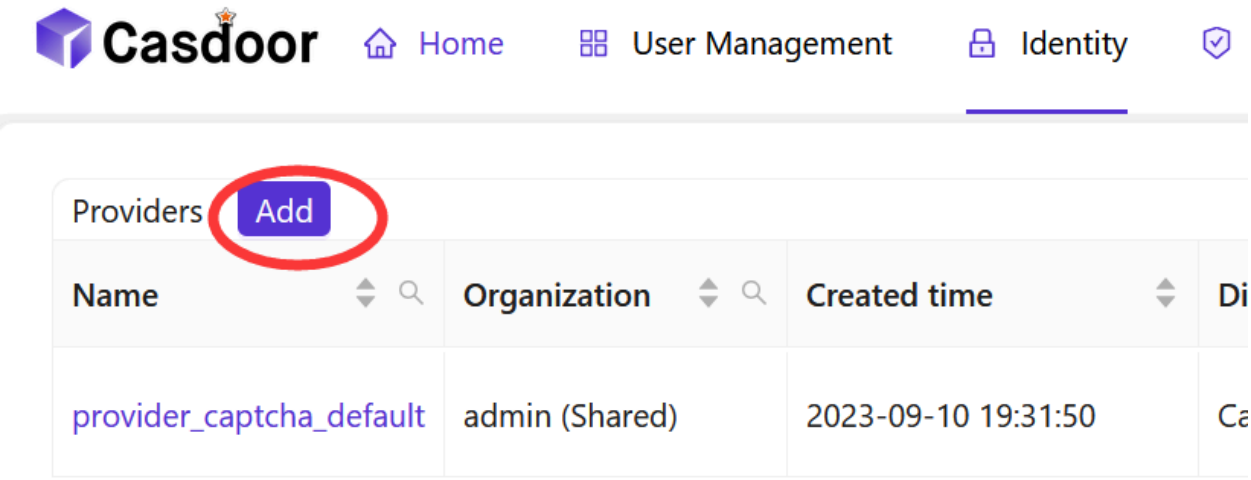
Step 2: Add a New Storage Provider

Storage providers are used to store data. They can be added in Casdoor by clicking the `Identity - Providers` button on the home page.



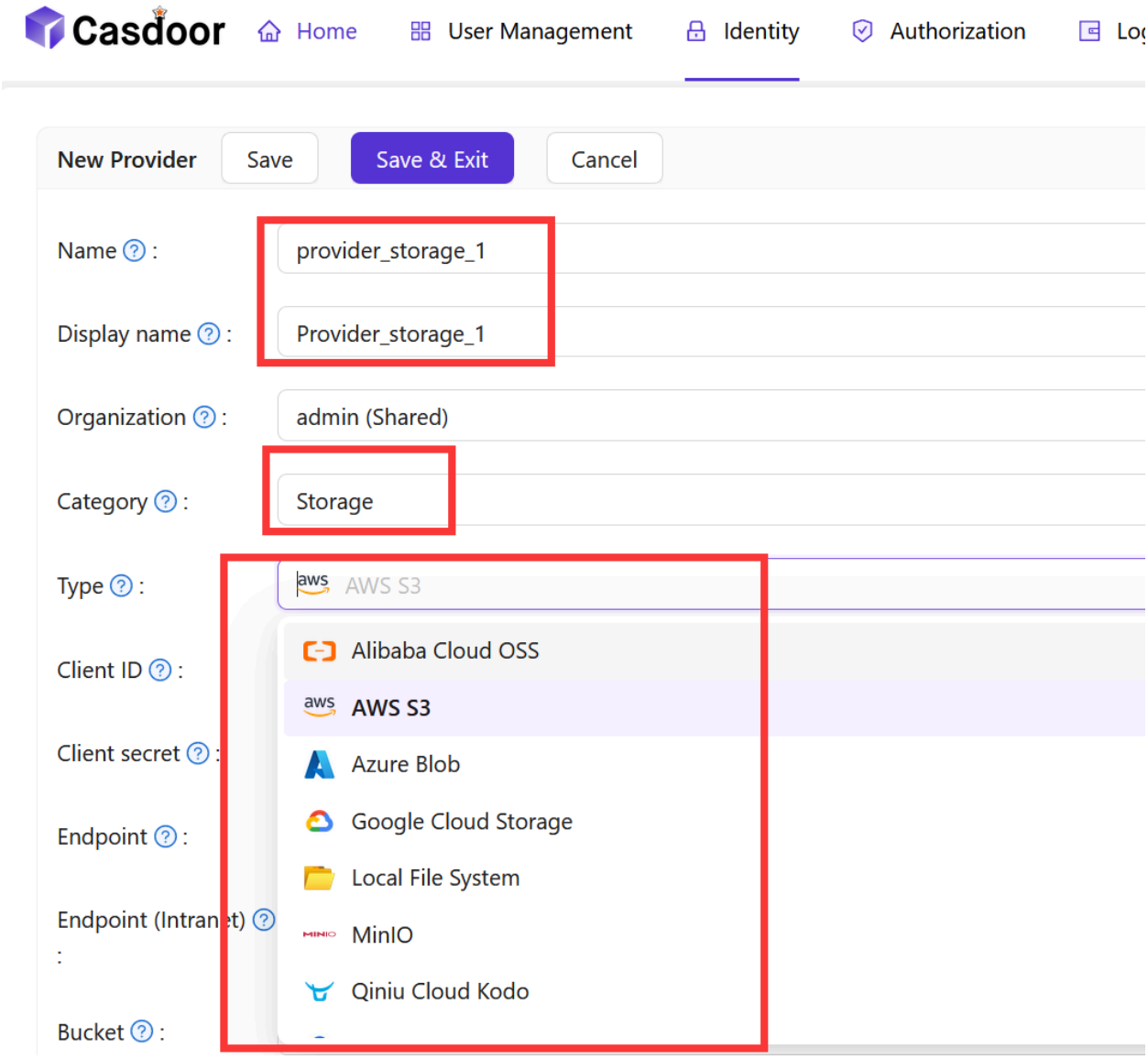
Step 2.1: Add a storage provider

Click the `Add` button to add a storage provider.



Step 2.2: Fill in the storage provider information

Fill in the storage provider information and click the `Save & Exit` button.



TIP

Casdoor supports many storage providers, including:

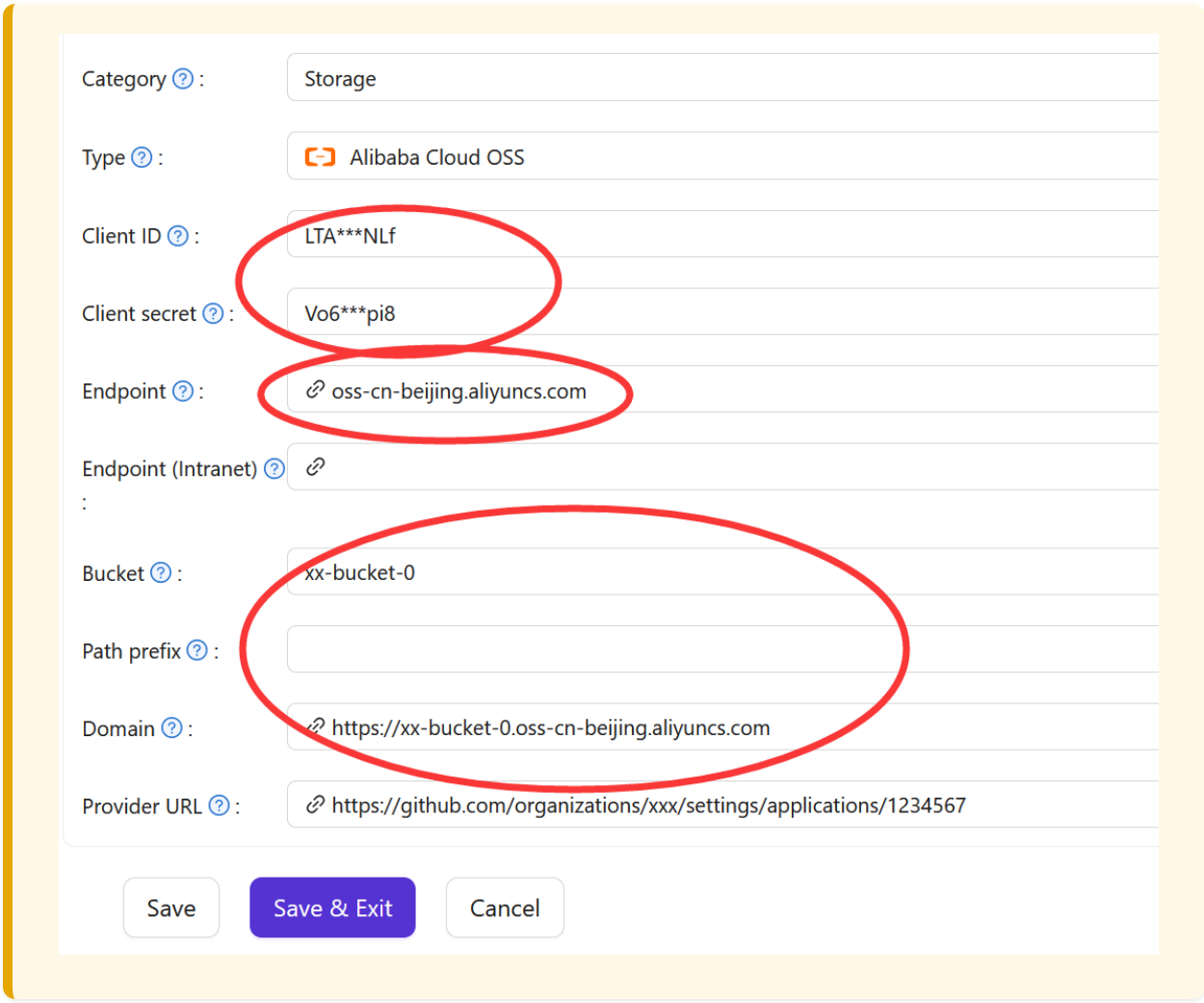
- AWS S3
- Azure Blob
- Google Cloud Storage
- MinIO

- Qiniu Cloud Kodo
- Alibaba Cloud OSS ...

Example

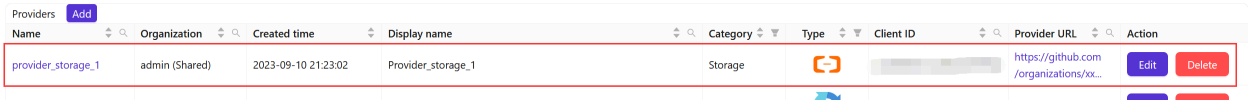
Add an Aliyun OSS storage provider

> ⚠ CAUTION
>
> - Client ID: The AccessKey ID of your Aliyun OSS account.
> - Client Secret: The AccessKey Secret of your Aliyun OSS account.
>
> `****` is the placeholder for your Aliyun OSS account information.



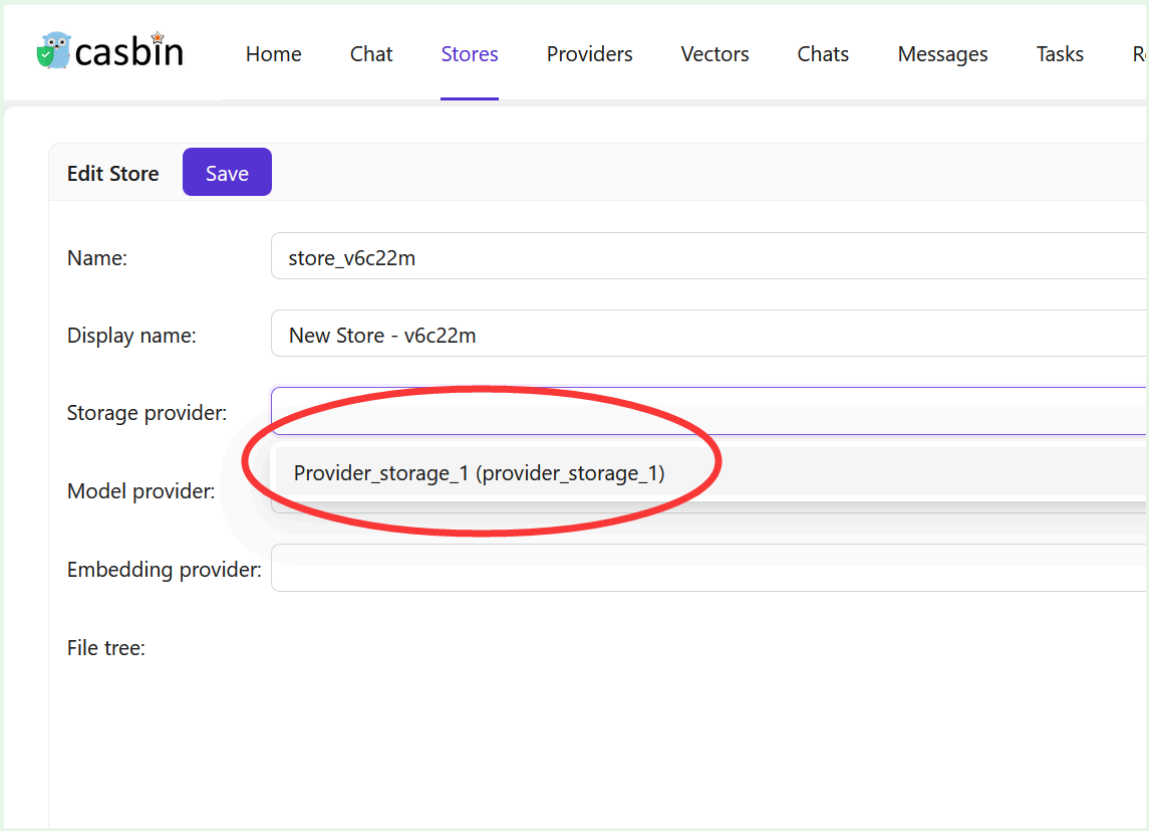
Step 2.3: View the storage provider

After adding the storage provider, you can view the storage provider information.

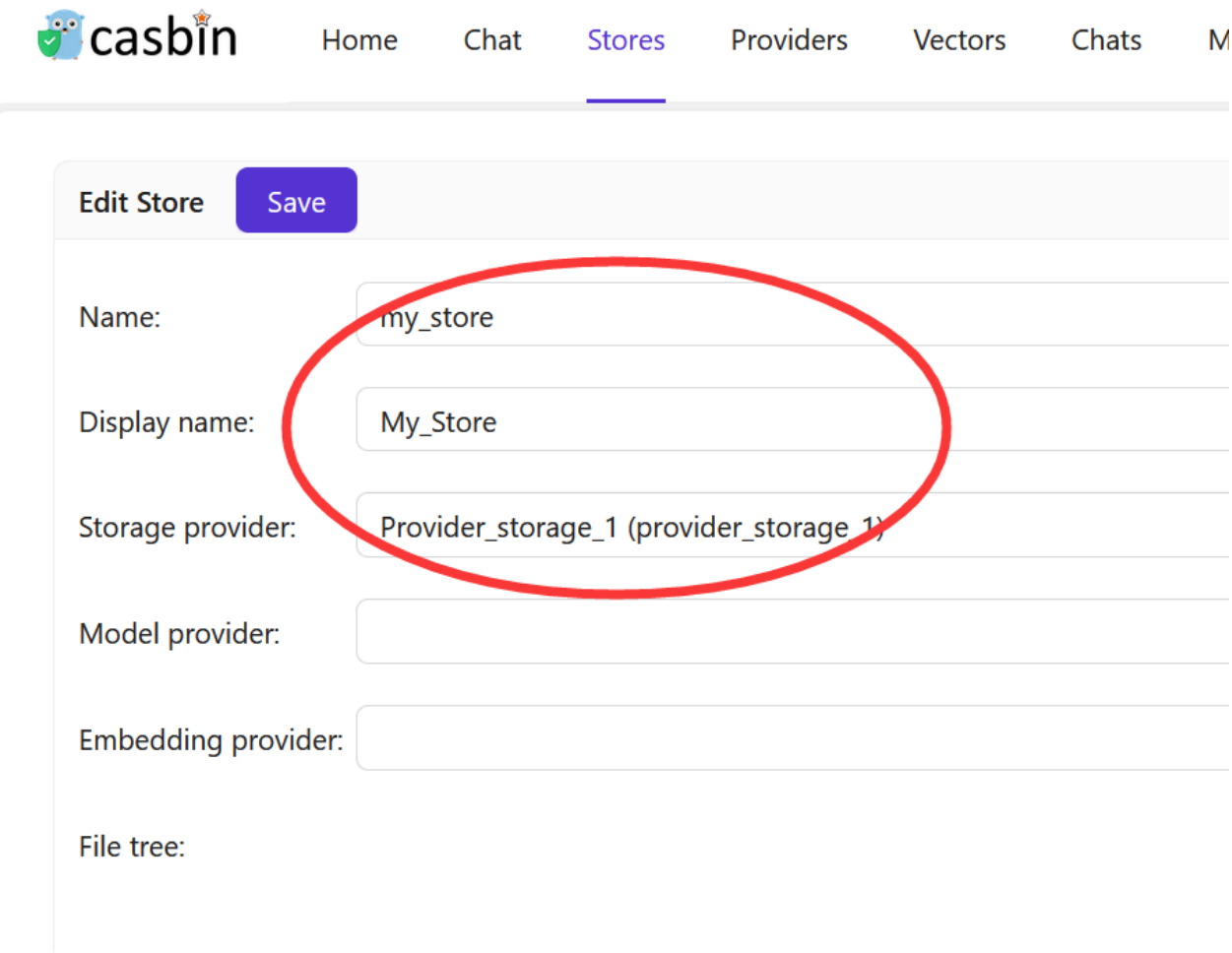


> **TIP**
>
> Storage providers come from Casdoor. You can add a storage provider in Casdoor and then add it to Casibase.

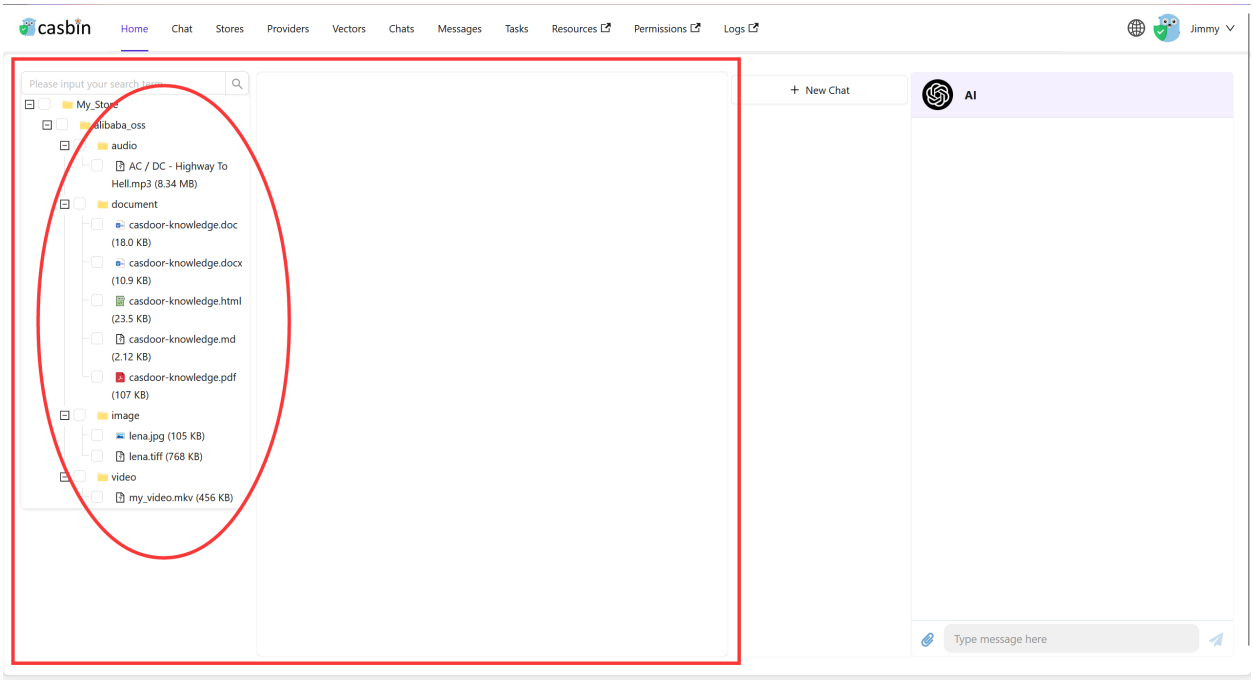
Refer to Step 2: Add a New Storage Provider for more information.



Store Example



Save the configuration, return to the home page, and you'll see the file-tree of the storage provider.



Now you can manage your data in Casibase.

In the next chapter, we'll learn how to add an `AI model provider` to Casibase.

Add an AI Model Provider

This document is a step-by-step tutorial designed for beginners. It will guide you through the process of integrating a model provider with Casibase, our powerful knowledge base system.

Introduction

Adding a model provider to Casibase enables you to enhance its functionality by incorporating machine learning models and AI capabilities. Model providers allow you to analyze and process data within your knowledge base system, making it more intelligent and efficient.

If you're new to integrating model providers, don't worry. We've broken down the process into simple steps that anyone can follow.

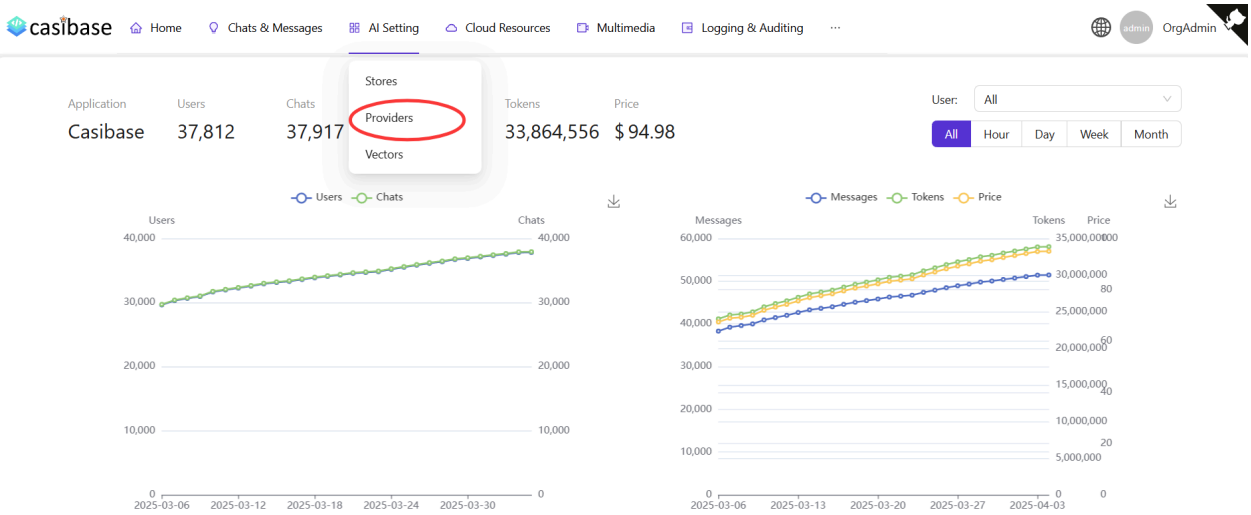
Step 1: Deploy Casdoor and Casibase

Before you can add an AI model provider, make sure you have Casdoor and Casibase deployed. If you haven't done, please refer to the Deploy Casdoor and Casibase tutorial.

Step 2: Add a New Model Provider

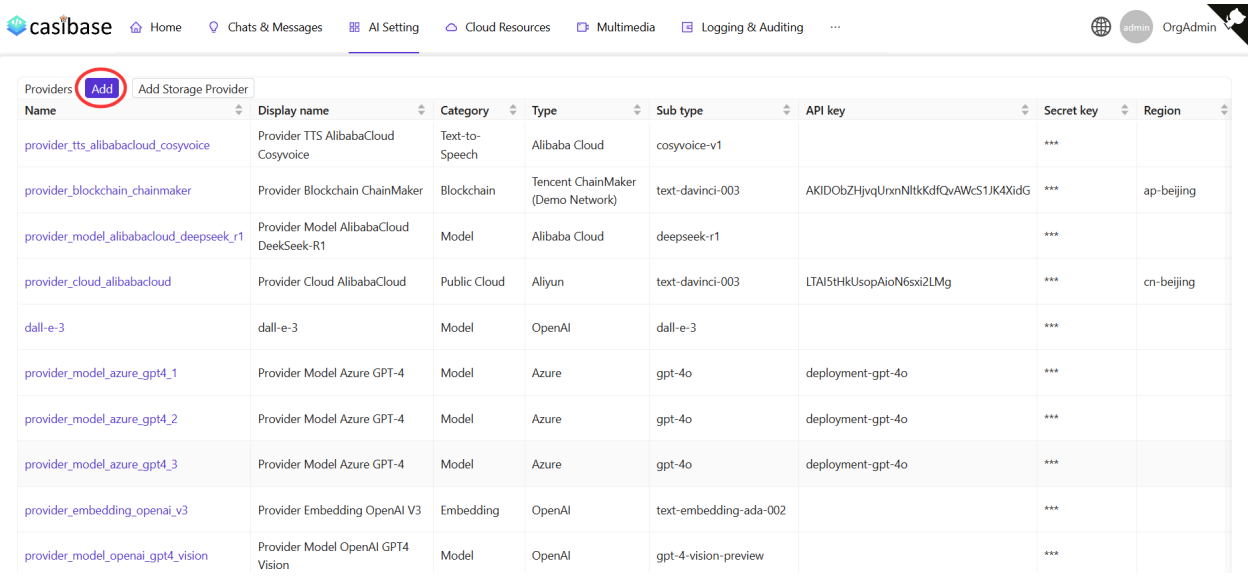
Model providers are used to integrate LLM into Casibase. You can add them by following these steps:

Click the `Providers` button on the home page.



Step 2.1: Add a Model Provider

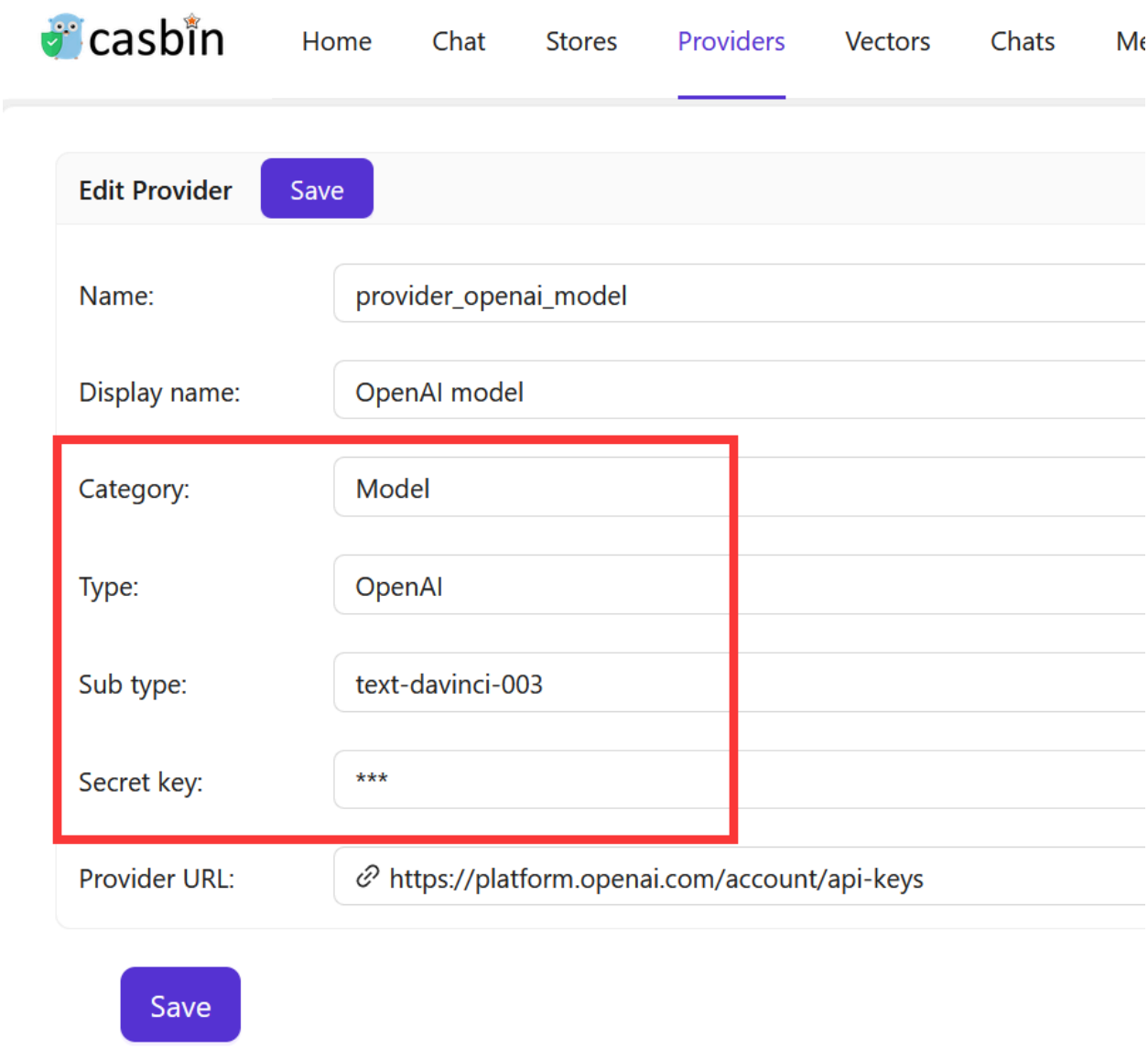
Click the `Add` button to add a model provider.



Name	Display name	Category	Type	Sub type	API key	Secret key	Region
provider_tts_alibabacloud_cosyvoice	Provider TTS AlibabaCloud Cosyvoice	Text-to-Speech	Alibaba Cloud	cosyvoice-v1		***	
provider_blockchain_chainmaker	Provider Blockchain ChainMaker	Blockchain	Tencent ChainMaker (Demo Network)	text-davinci-003	AKIDObZHjvqUrxnNltkKdfQvAWcS1JK4XidG	***	ap-beijing
provider_model_alibabacloud_deepseek_r1	Provider Model AlibabaCloud DeekSeek-R1	Model	Alibaba Cloud	deepseek-r1		***	
provider_cloud_alibabacloud	Provider Cloud AlibabaCloud	Public Cloud	Aliyun	text-davinci-003	LTAI5tHkUsopAioN6sxi2LMg	***	cn-beijing
dall-e-3	dall-e-3	Model	OpenAI	dall-e-3		***	
provider_model_azure_gpt4_1	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_model_azure_gpt4_2	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_model_azure_gpt4_3	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_embedding_openai_v3	Provider Embedding OpenAI V3	Embedding	OpenAI	text-embedding-ada-002		***	
provider_model_openai_gpt4_vision	Provider Model OpenAI GPT4 Vision	Model	OpenAI	gpt-4-vision-preview		***	

Step 2.2: Fill in Model Provider Details

Fill in the model provider details and click the `Save & Exit` button.



TIP

Casibase supports many model providers, including:

- Hugging Face
  - meta-llama/Llama-2-7b

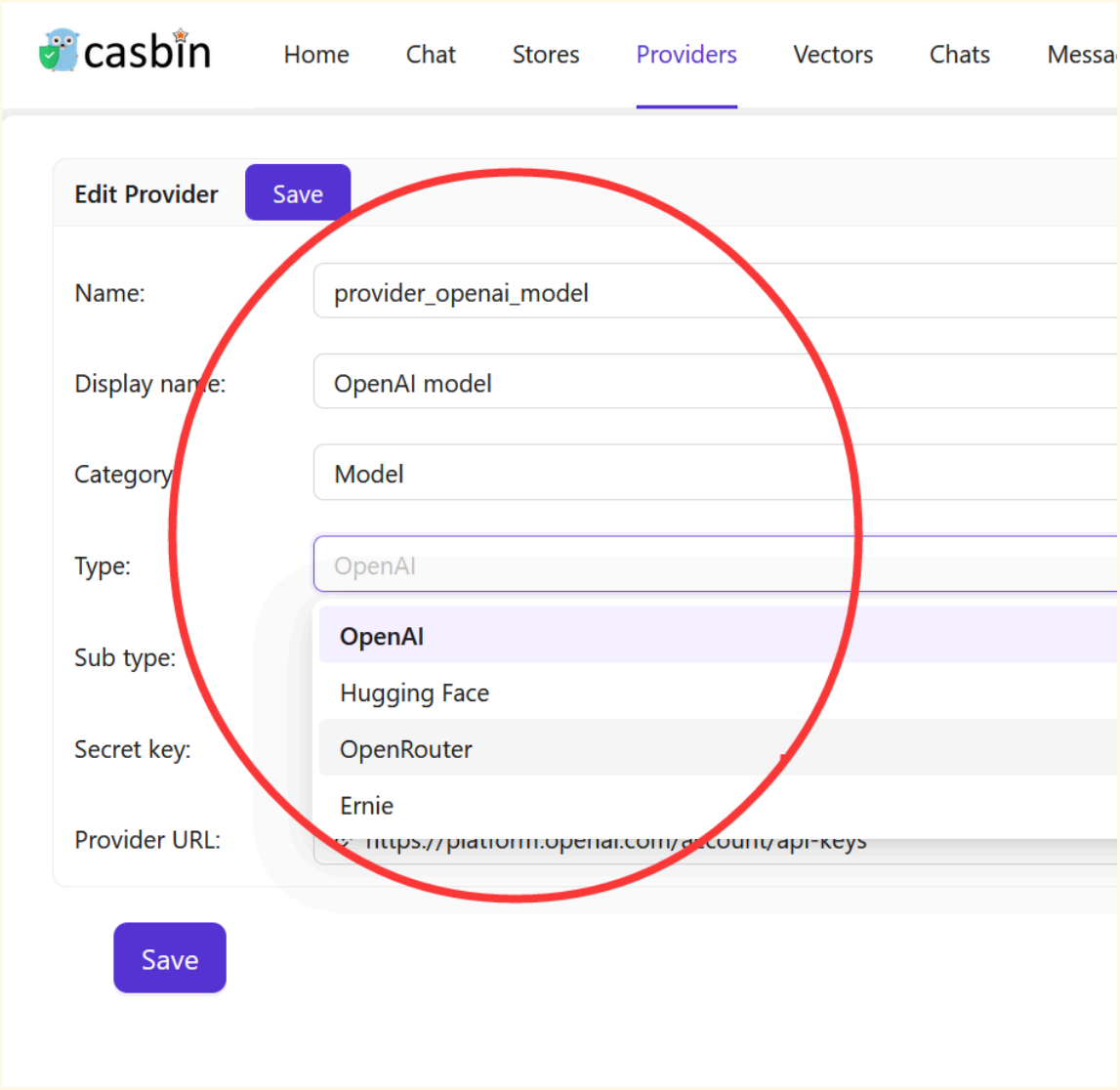
    - THUDM/chatglm2-6b
    - baichuan-inc/Baichuan2-13B-chat
    - gpt2
    - ……
- OpenRouter
    - anthropic/claude-2
    - palm-2-chat-bison
    - palm-2-codechat-bison
    - openai/gpt-4
    - ……
- OpenAI
    - text-davinci-003
    - gpt-3.5-turbo
    - gpt-4
    - ……

⚠ CAUTION

- Category: The first-level category of the model provider. For example, `Model` and `Embedding`.
- Type: The second-level category of the model provider. For example, `OpenAI` and `Hugging Face`.
- SecretKey: The secret key of your OpenAI account.

Example

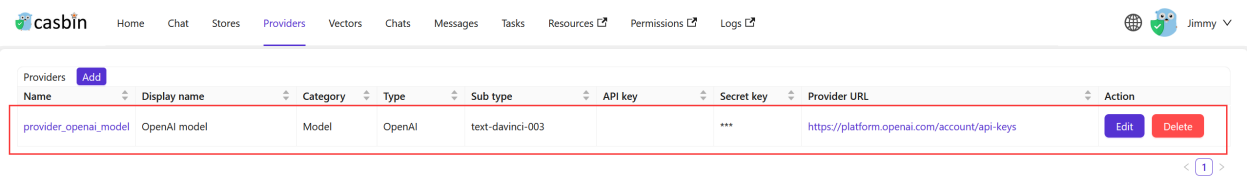
Add an OpenAI model provider



> ⚠ CAUTION
>
> Some models don't support **streaming-output**. Known models that support streaming-output include:
>
> - `gpt-3.5-turbo-0613`

After adding a model provider, you can use it to analyze and process data in Casibase using chatbots, question answering, and other AI capabilities.

Return to the model provider list page:



Now that you've added a model provider, you can use it to analyze and process data in Casibase using chatbots, question answering, and other AI capabilities.

In the next chapter, we'll learn how to add an embedding provider to Casibase.

Add an Embedding Provider

This document is a step-by-step tutorial designed for beginners. It will guide you through the process of integrating an embedding provider with Casibase, our powerful knowledge base system.

Introduction

Embedding is a technique used to represent words and documents as vectors. Embedding providers allow you to analyze and process data within your knowledge base system, making it more intelligent and efficient.

Refer to the Core Concepts section of our previous documentation for more information about embedding.

In Casibase, you can add an embedding provider by following these steps:

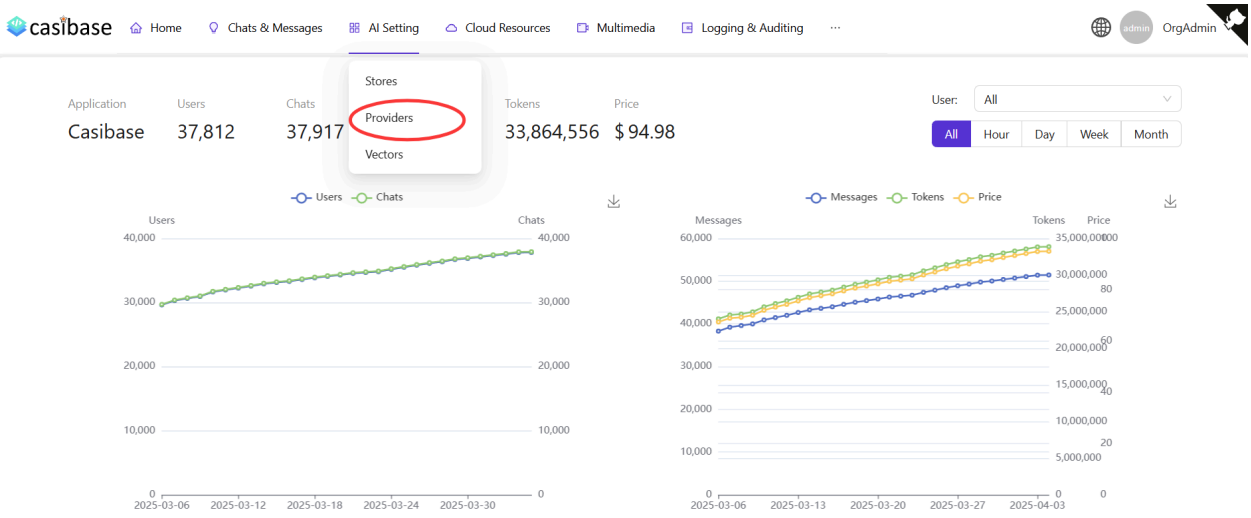
Step 1: Deploy Casdoor and Casibase

Before you can add an embedding model provider, make sure you have Casdoor and Casibase deployed. If you haven't done, please refer to the Deploy Casdoor and Casibase tutorial.

Step 2: Add a New Embedding Provider

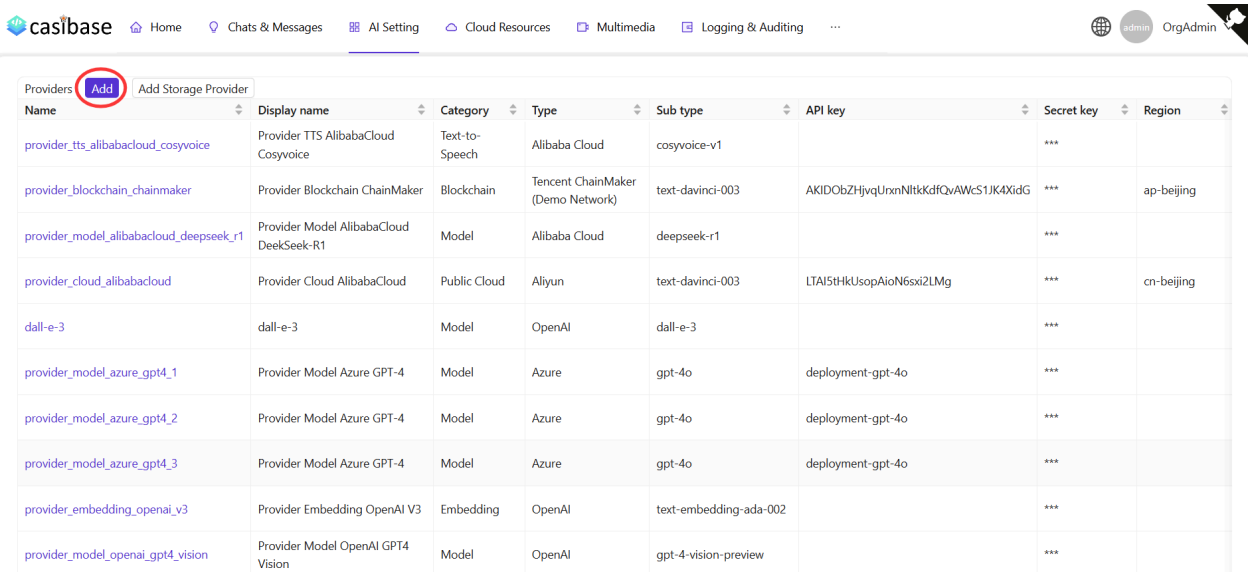
Embedding providers are used to integrate embedding into Casibase. You can add them by following these steps:

Click the `Providers` button on the home page.



Step 2.1: Add an Embedding Provider

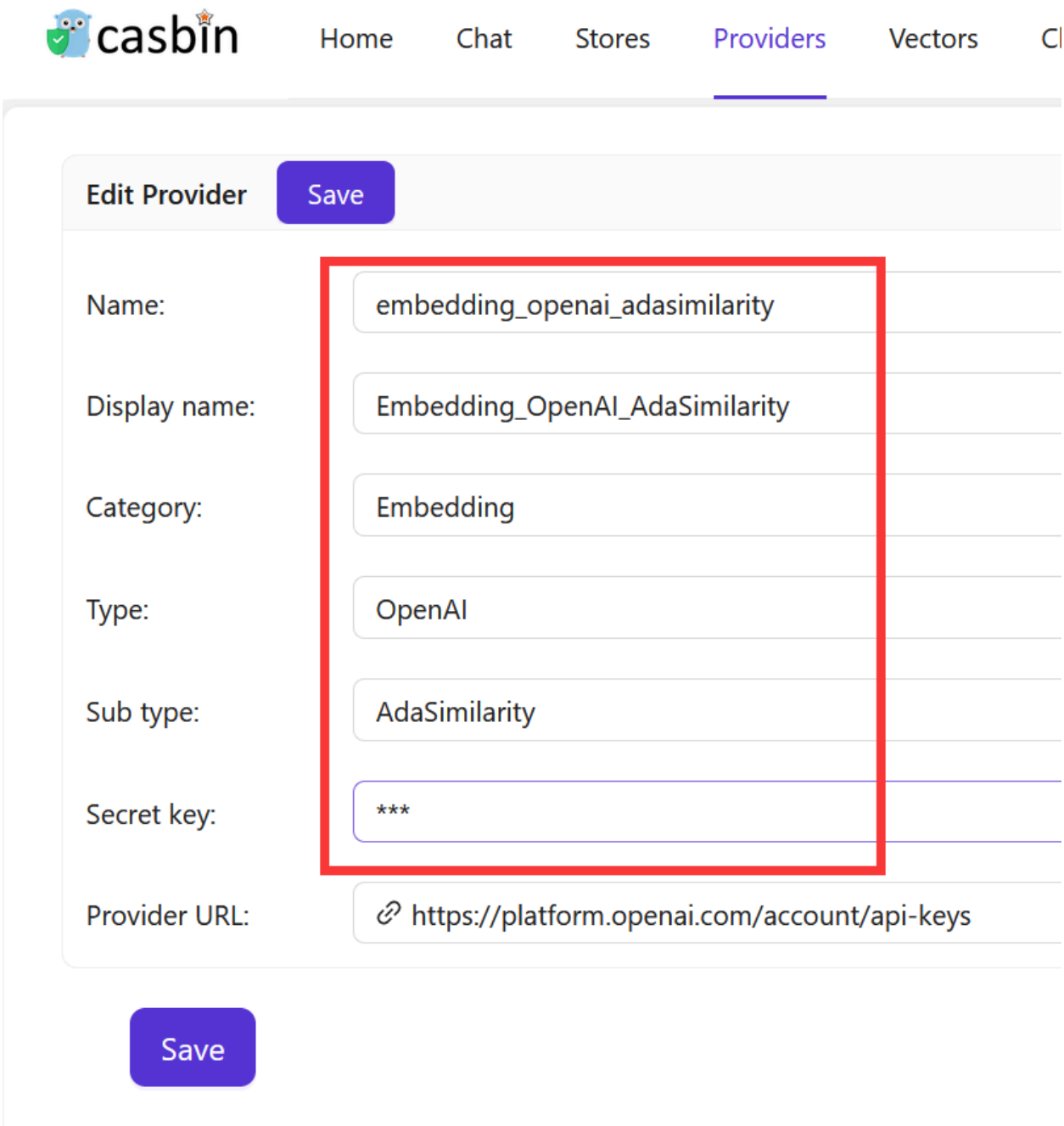
Click the `Add` button to add an embedding provider.



Name	Display name	Category	Type	Sub type	API key	Secret key	Region
provider_tts_alibabacloud_cosyvoice	Provider TTS AlibabaCloud Cosyvoice	Text-to-Speech	Alibaba Cloud	cosyvoice-v1		***	
provider_blockchain_chainmaker	Provider Blockchain ChainMaker	Blockchain	Tencent ChainMaker (Demo Network)	text-davinci-003	AKIDObZHjvqUrxnNltkKdfQvAWcS1JK4XidG	***	ap-beijing
provider_model_alibabacloud_deepseek_r1	Provider Model AlibabaCloud DeekSeek-R1	Model	Alibaba Cloud	deepseek-r1		***	
provider_cloud_alibabacloud	Provider Cloud AlibabaCloud	Public Cloud	Aliyun	text-davinci-003	LTAI5tHkUsopAioN6sxi2LMg	***	cn-beijing
dall-e-3	dall-e-3	Model	OpenAI	dall-e-3		***	
provider_model_azure_gpt4_1	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_model_azure_gpt4_2	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_model_azure_gpt4_3	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_embedding_openai_v3	Provider Embedding OpenAI V3	Embedding	OpenAI	text-embedding-ada-002		***	
provider_model_openai_gpt4_vision	Provider Model OpenAI GPT4 Vision	Model	OpenAI	gpt-4-vision-preview		***	

Step 2.2: Fill in Embedding Provider Details

Fill in the embedding provider details and click the `Save & Exit` button.

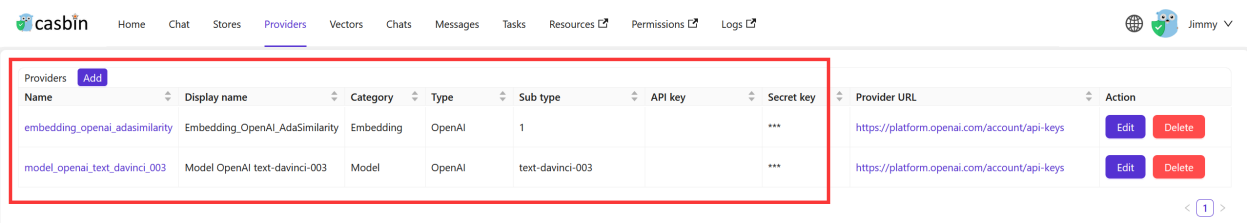


TIP

Same as the Model Provider section, Casibase supports many embedding providers, including:

- OpenAI
  - AdaSimilarity
  - DavinciSimilarity
  - AdaEmbedding2
  - ......
- Hugging Face
  - sentence-transformers/paraphrase-MiniLM-L6-v2
  - ......

Return providers list page:



Now, you can use the embedding provider to convert text to vectors.

After adding an embedding provider, you can use it to retrieve similar documents in Casibase. For more information, please refer to the Core Concepts section of our previous documentation.

In the next chapter, we will learn how to integrate storage providers, model providers, and embedding providers with Casibase.

Add a Text-to-Speech Model Provider

This document is a step-by-step tutorial designed for beginners. It will guide you through the process of integrating a text-to-speech provider with Casibase, our powerful knowledge base system.

Introduction

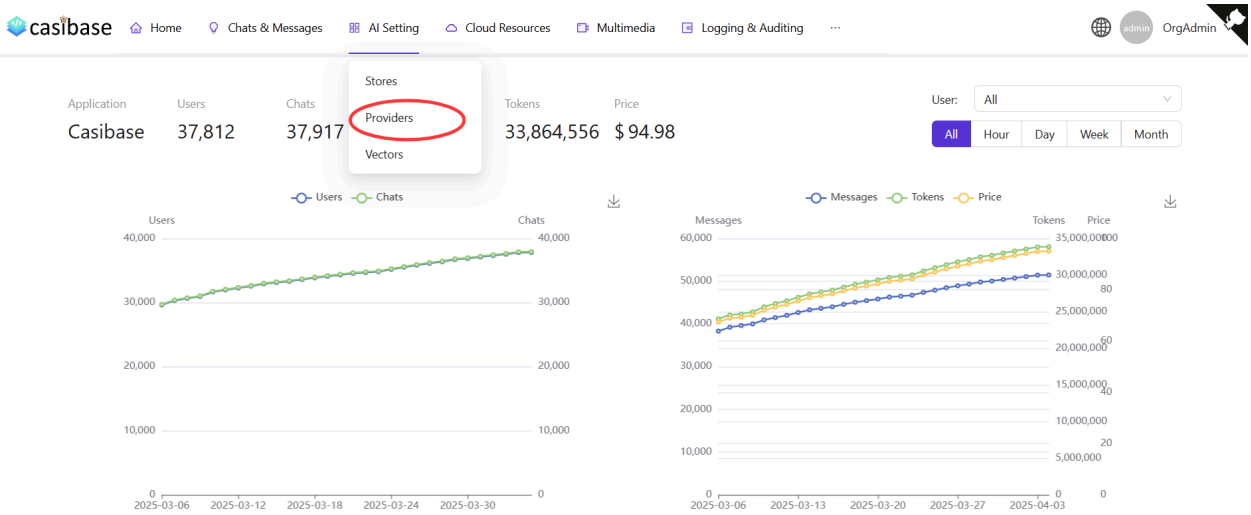
Text-to-Speech (TTS) is a technology that converts text into spoken voice output. TTS providers allow your Casibase applications to communicate with users through synthesized speech, enhancing the user experience and accessibility of your knowledge base system.

In Casibase, integrating a TTS provider enables your AI applications to verbally respond to queries, creating more interactive and engaging user experiences.

Add a New Text-to-Speech Provider

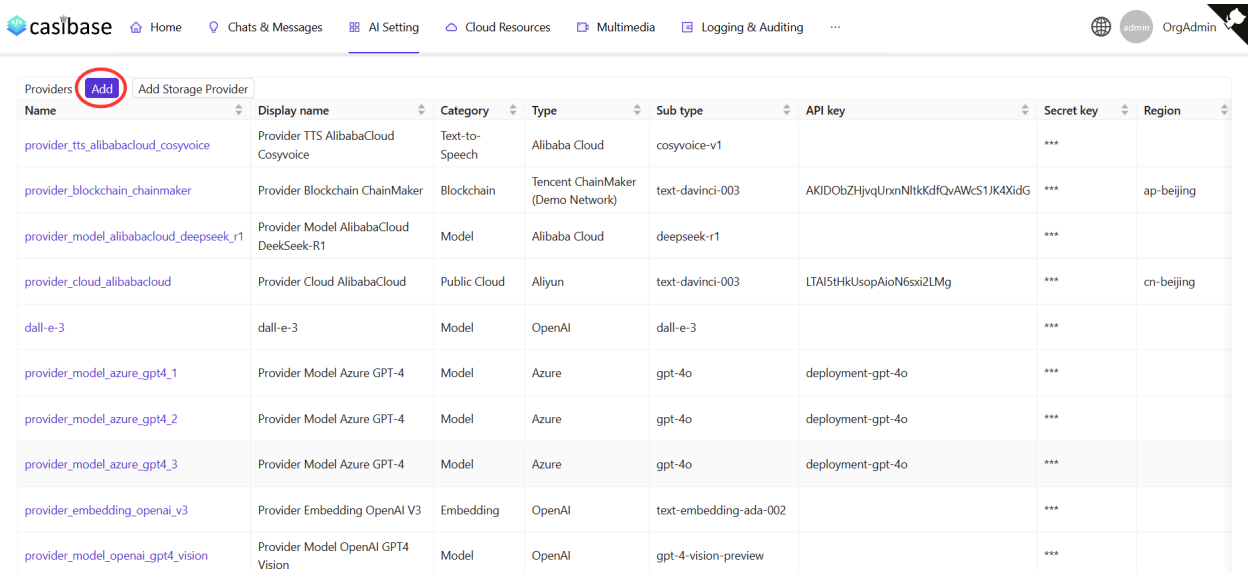
Text-to-Speech providers are used to integrate voice synthesis capabilities into Casibase. You can add them by following these steps:

Click the `Providers` button on the page.



Add a Text-to-Speech Provider

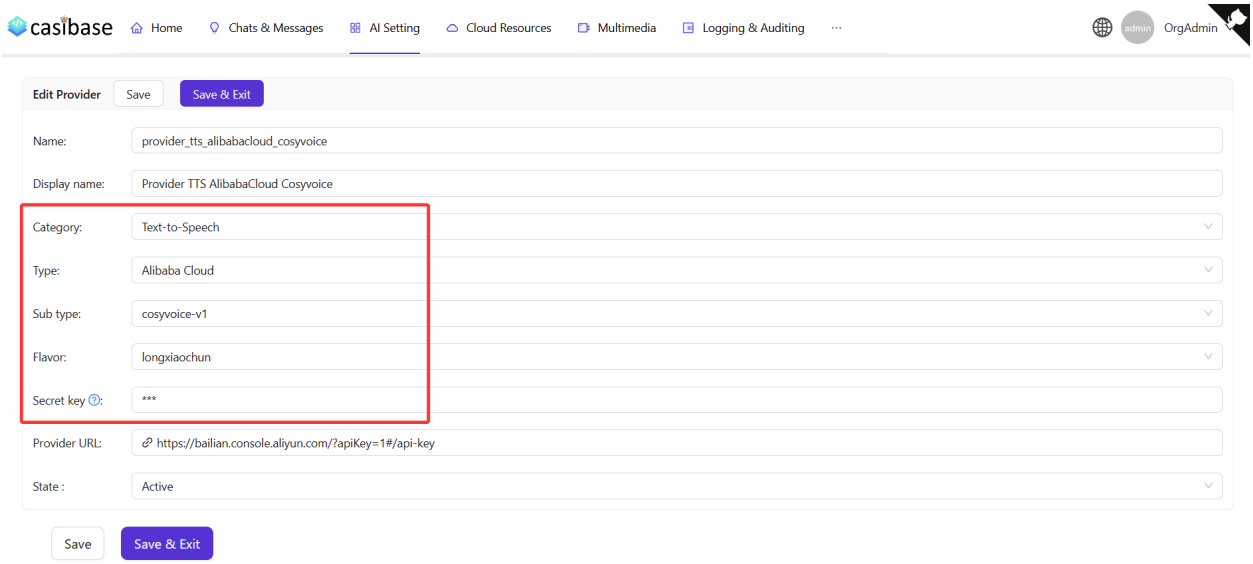
Click the `Add` button to add a Text-to-Speech provider.



Name	Display name	Category	Type	Sub type	API key	Secret key	Region
provider_tts_alibabacloud_cosyvoice	Provider TTS AlibabaCloud Cosyvoice	Text-to-Speech	Alibaba Cloud	cosyvoice-v1		***	
provider_blockchain_chainmaker	Provider Blockchain ChainMaker	Blockchain	Tencent ChainMaker (Demo Network)	text-davinci-003	AKIDObZHjvqUrxnNltkKdfQvAWcS1JK4XidG	***	ap-beijing
provider_model_alibabacloud_deepseek_r1	Provider Model AlibabaCloud DeekSeek-R1	Model	Alibaba Cloud	deepseek-r1		***	
provider_cloud_alibabacloud	Provider Cloud AlibabaCloud	Public Cloud	Aliyun	text-davinci-003	LTAI5tHkUsopAioN6sxi2LMg	***	cn-beijing
dall-e-3	dall-e-3	Model	OpenAI	dall-e-3		***	
provider_model_azure_gpt4_1	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_model_azure_gpt4_2	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_model_azure_gpt4_3	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_embedding_openai_v3	Provider Embedding OpenAI V3	Embedding	OpenAI	text-embedding-ada-002		***	
provider_model_openai_gpt4_vision	Provider Model OpenAI GPT4 Vision	Model	OpenAI	gpt-4-vision-preview		***	

Fill in Text-to-Speech Provider Details

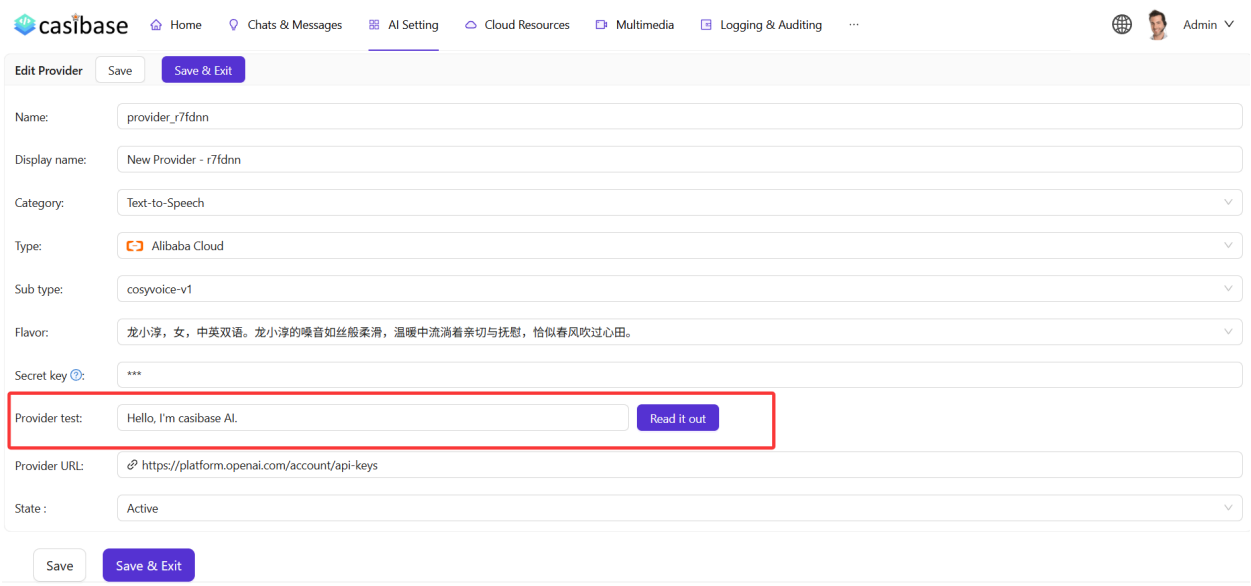
Fill in the embedding provider details and click the `Save & Exit` button.



> **TIP**
>
> Casibase currently supports the following Text-to-Speech provider:
>
> - Alibaba Cloud
>   - cosyvoice-v1 (with multiple voice options)

Testing Your Text-to-Speech Provider

You can test your TTS provider by clicking the `Read it out` button. This will allow you to enter text and hear the synthesized speech output.



This testing feature allows you to verify your TTS configuration before implementing it in your applications, ensuring the voice quality and settings meet your requirements.

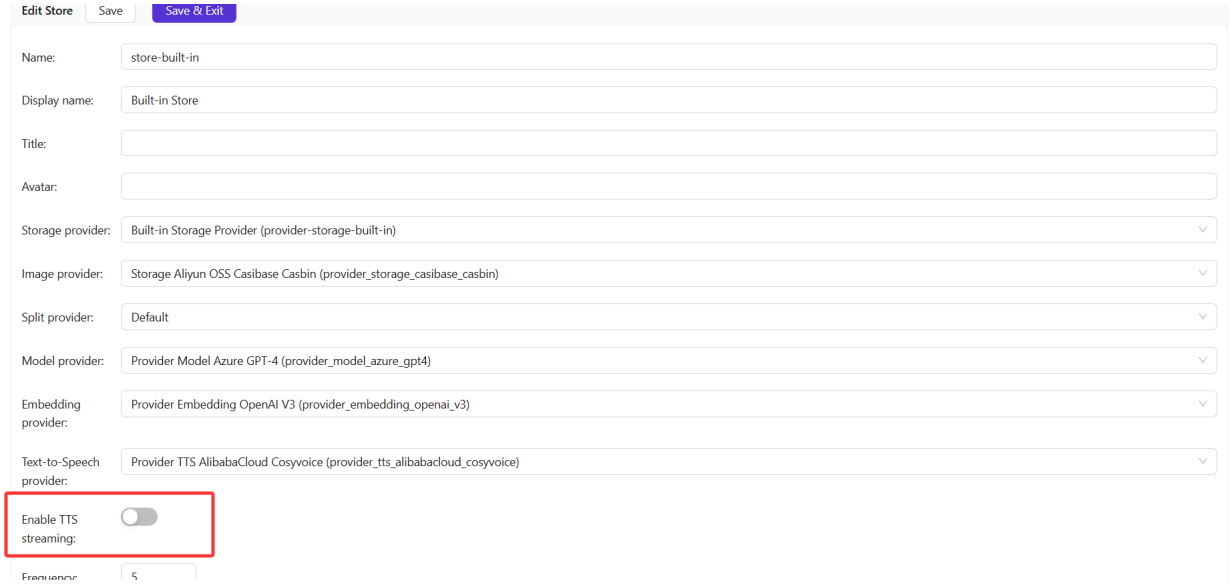
Voice Options for Alibaba Cloud

When using Alibaba Cloud's `cosyvoice-v1`, you can choose from various voice options:

- longwan
- longcheng
- ……

Using Text-to-Speech in Stores

After adding a Text-to-Speech provider, you can select this provider in your store settings and choose whether to enable TTS streaming.



Now, your store can convert text responses to speech, providing a more interactive experience for users.

Add a Speech-to-Text Provider

This document is a step-by-step tutorial designed for beginners. It will guide you through the process of integrating a speech-to-text provider with Casibase, our powerful knowledge base system.

Introduction

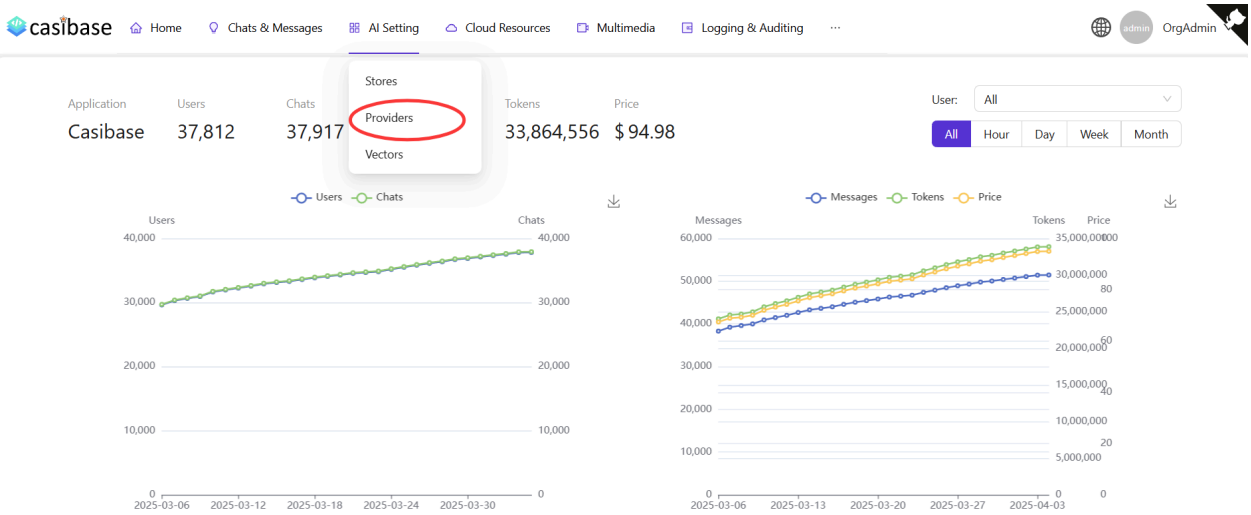
Speech-to-Text (STT) is a technology that converts spoken language into written text. STT providers allow your Casibase applications to understand and process spoken user input, enhancing the user experience and accessibility of your knowledge base system.

In Casibase, integrating an STT provider enables your AI applications to receive and process voice queries, creating more interactive and natural user interactions.

Add a New Speech-to-Text Provider

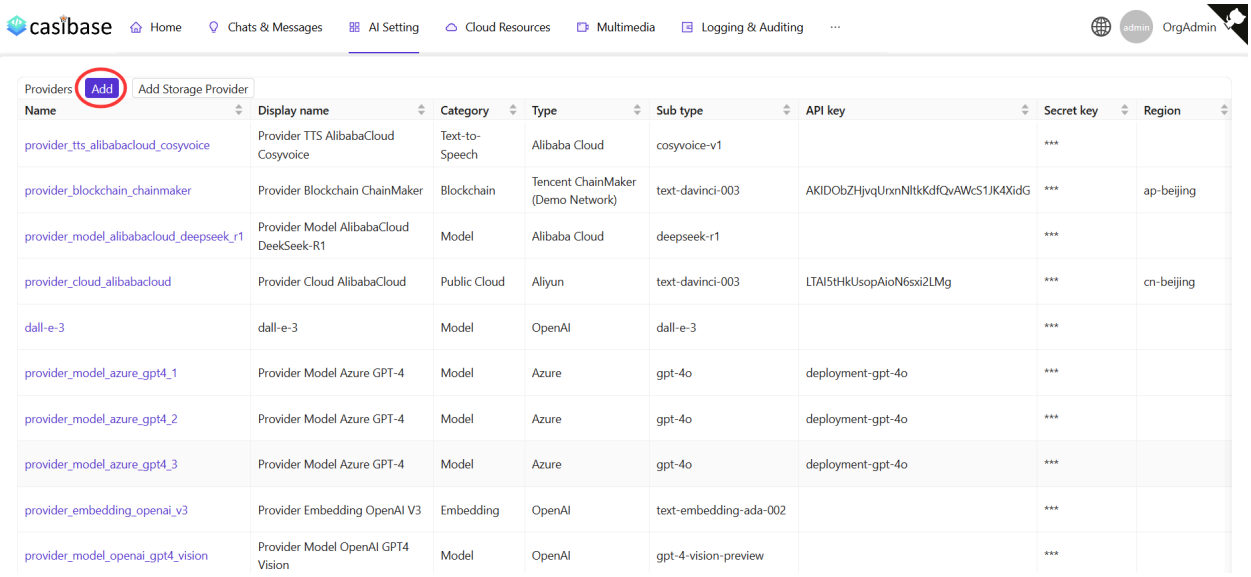
Speech-to-Text providers are used to integrate voice recognition capabilities into Casibase. You can add them by following these steps:

Click the `Providers` button on the page.



Add a Speech-to-Text Provider

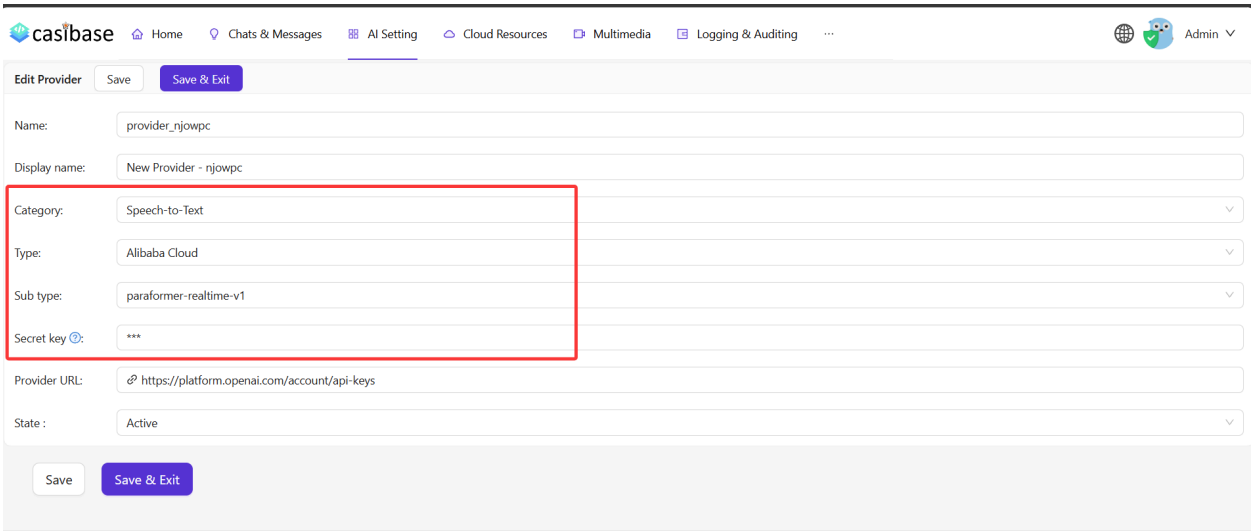
Click the `Add` button to add a Speech-to-Text provider.



Name	Display name	Category	Type	Sub type	API key	Secret key	Region
provider_tts_alibabacloud_cosyvoice	Provider TTS AlibabaCloud Cosyvoice	Text-to-Speech	Alibaba Cloud	cosyvoice-v1		***	
provider_blockchain_chainmaker	Provider Blockchain ChainMaker	Blockchain	Tencent ChainMaker (Demo Network)	text-davinci-003	AKIDObZHjvqUrxnNltkKdfQvAWcS1JK4XidG	***	ap-beijing
provider_model_alibabacloud_deepseek_r1	Provider Model AlibabaCloud DeekSeek-R1	Model	Alibaba Cloud	deepseek-r1		***	
provider_cloud_alibabacloud	Provider Cloud AlibabaCloud	Public Cloud	Aliyun	text-davinci-003	LTAI5tHkUsopAioN6sxi2LMg	***	cn-beijing
dall-e-3	dall-e-3	Model	OpenAI	dall-e-3		***	
provider_model_azure_gpt4_1	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_model_azure_gpt4_2	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_model_azure_gpt4_3	Provider Model Azure GPT-4	Model	Azure	gpt-4o	deployment-gpt-4o	***	
provider_embedding_openai_v3	Provider Embedding OpenAI V3	Embedding	OpenAI	text-embedding-ada-002		***	
provider_model_openai_gpt4_vision	Provider Model OpenAI GPT4 Vision	Model	OpenAI	gpt-4-vision-preview		***	

Fill in Speech-to-Text Provider Details

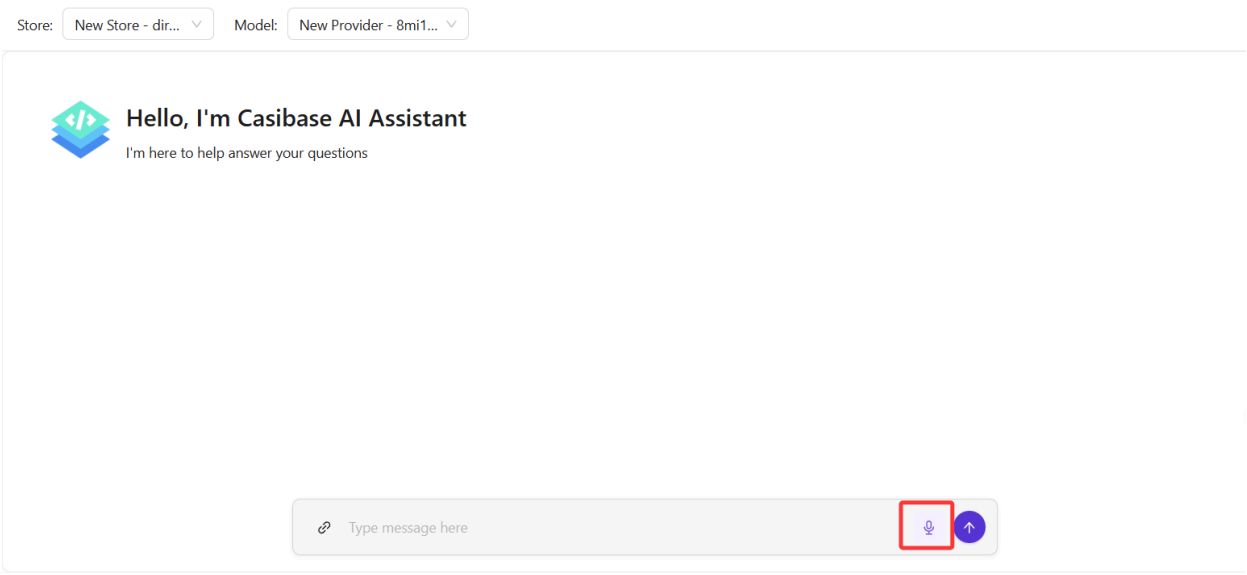
Fill in the speech-to-text provider details and click the `Save & Exit` button.



Using Voice Recognition

When you click the voice recognition button in your Casibase application, the following process occurs:

1. The browser will request permission to access your microphone
2. Once granted, the system will begin listening and automatically convert your speech to text
3. After you finish speaking, the recognized text will be automatically sent as a message



This feature enables hands-free interaction with your Casibase applications, making them more accessible and convenient to use.

> TIP
>
> Casibase currently supports the following Speech-to-Text provider:
>
> - Alibaba Cloud
>   - paraformer-realtime-v1

Add a Store

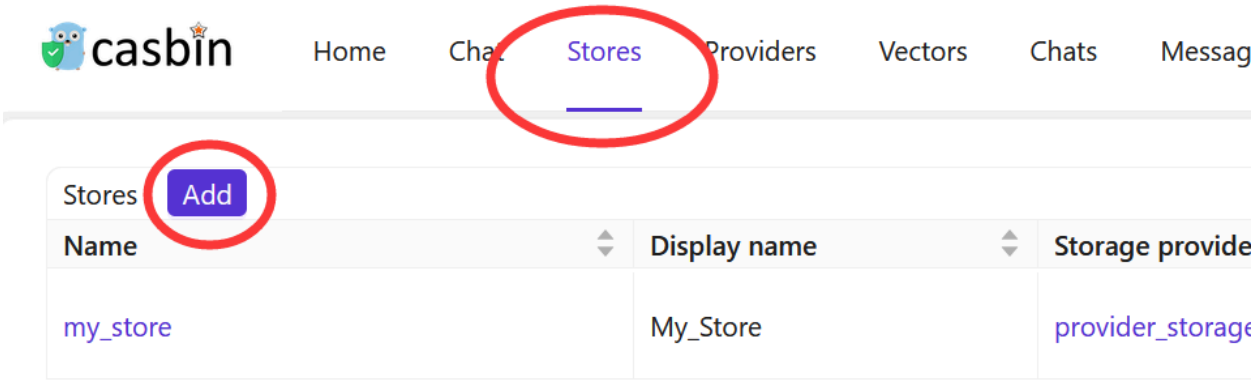
We have added a storage provider, a model provider, and an embedding provider. Now we need to configure a store to use these providers.

> ⚠ CAUTION
>
> This guide assumes that you have already deployed a Casibase knowledge base system. If you haven't done, please refer to the Deploy Casdoor and Casibase tutorial.
>
> Besides, this guide assumes that you have already added a storage provider, a model provider, and an embedding provider. If you have not, please follow the Add a Storage Provider, Add a AI Model Provider, and Add an Embedding Provider guides.

Step 1: Add a New Store

Stores are used to integrate storage, model, and embedding providers into Casibase. You can add them by following these steps:

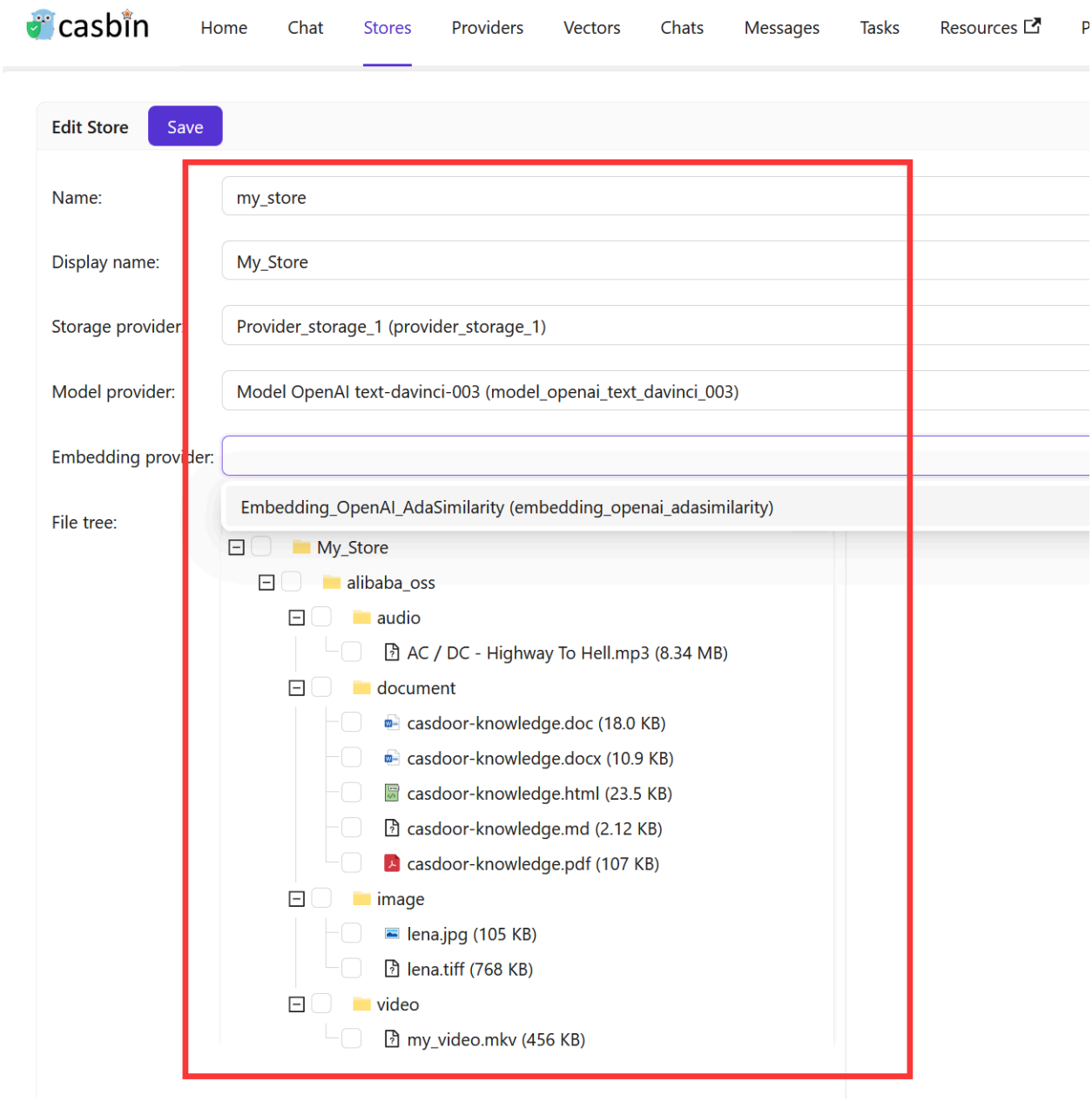
Click the `Stores` button on the home page and then click the `Add` button to add a store.



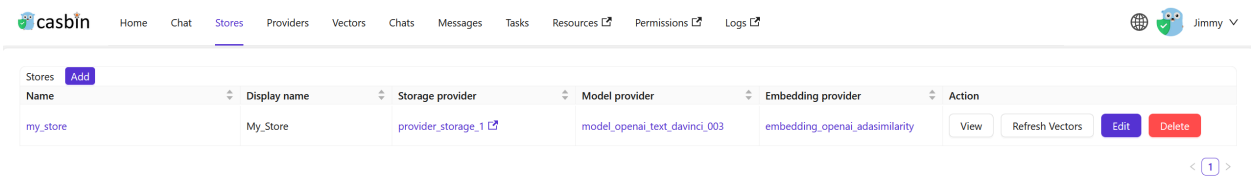
Step 2: Fill in Store Details

Select the storage provider, model provider, and embedding provider you added before.

Fill in the store details and click the `Save & Exit` button.



Click the `Save & Exit` button and return to the stores list page:



Now, you can use the store to store knowledge base data, convert text to vectors, and chat with the chatbot.

In the next section, we will learn how to chat with the chatbot in Casibase.

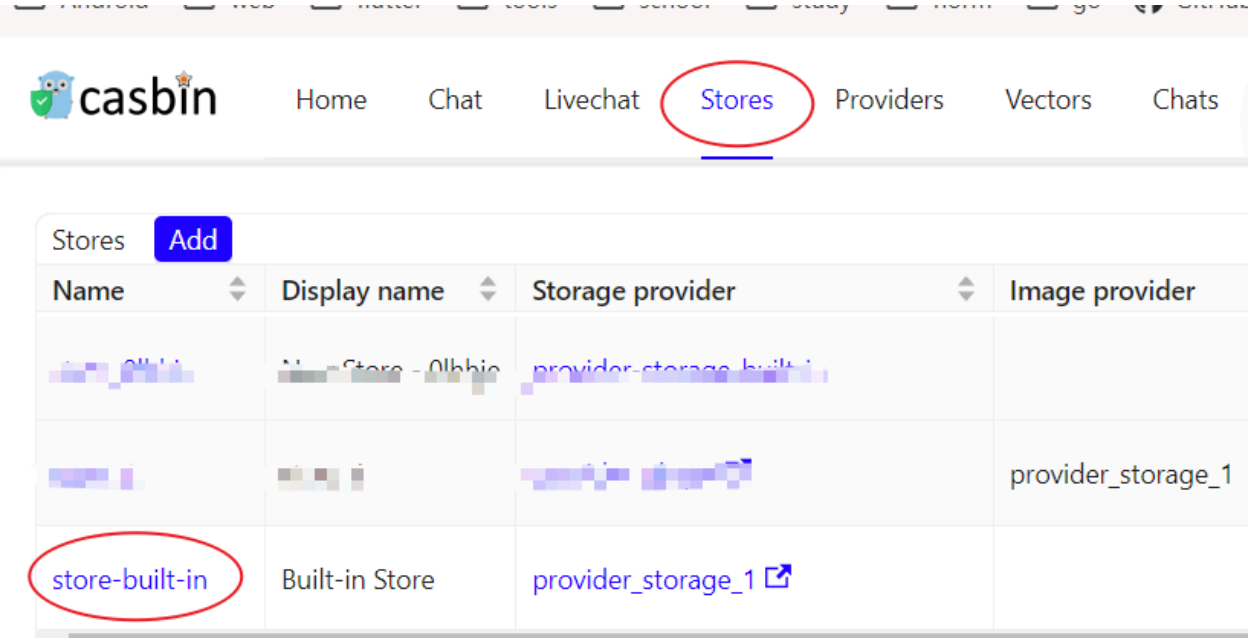
Support Multi-store

The multi-store mode provides users with different models, suggestions, and more within each distinct store.

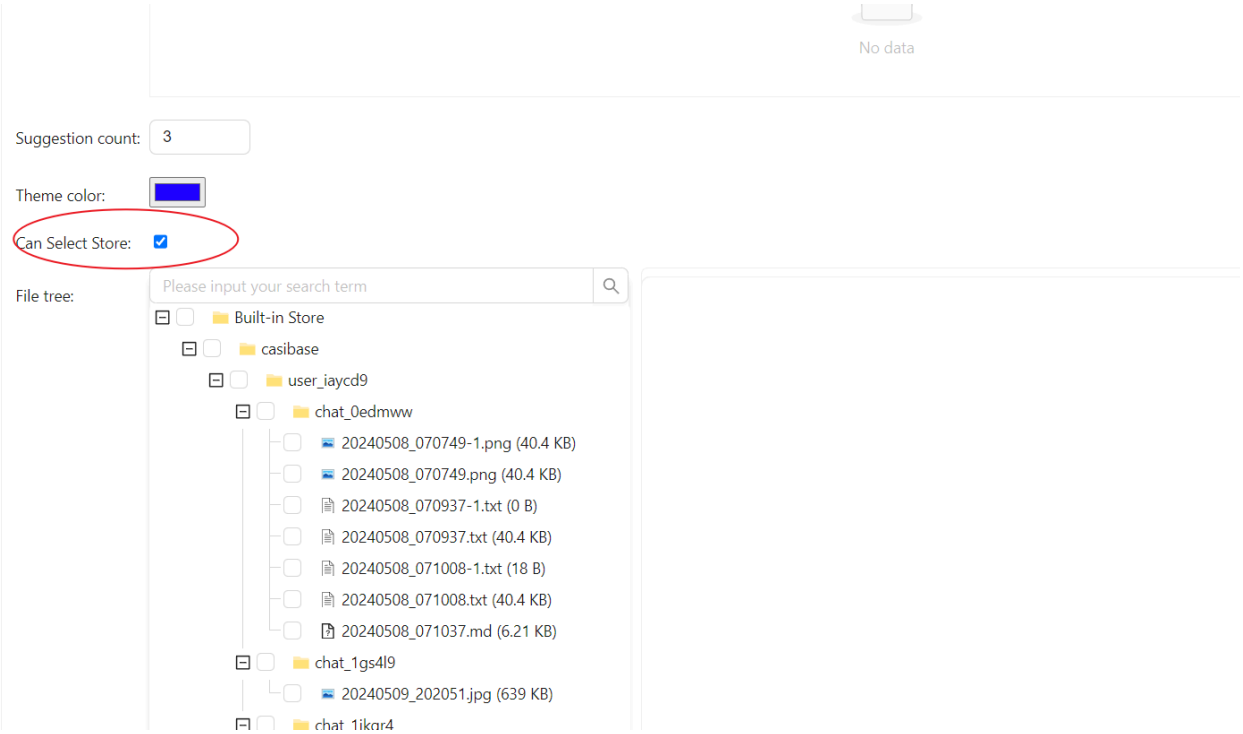
Step 1: Enable Multi-store

First, you should enable multi-store mode in the built-in store.

Click the `Stores` button on the home page and then click the `store-built-in` button to enter the store-built-in store.



Scroll down and find the `Can Select Store` field, tick it.

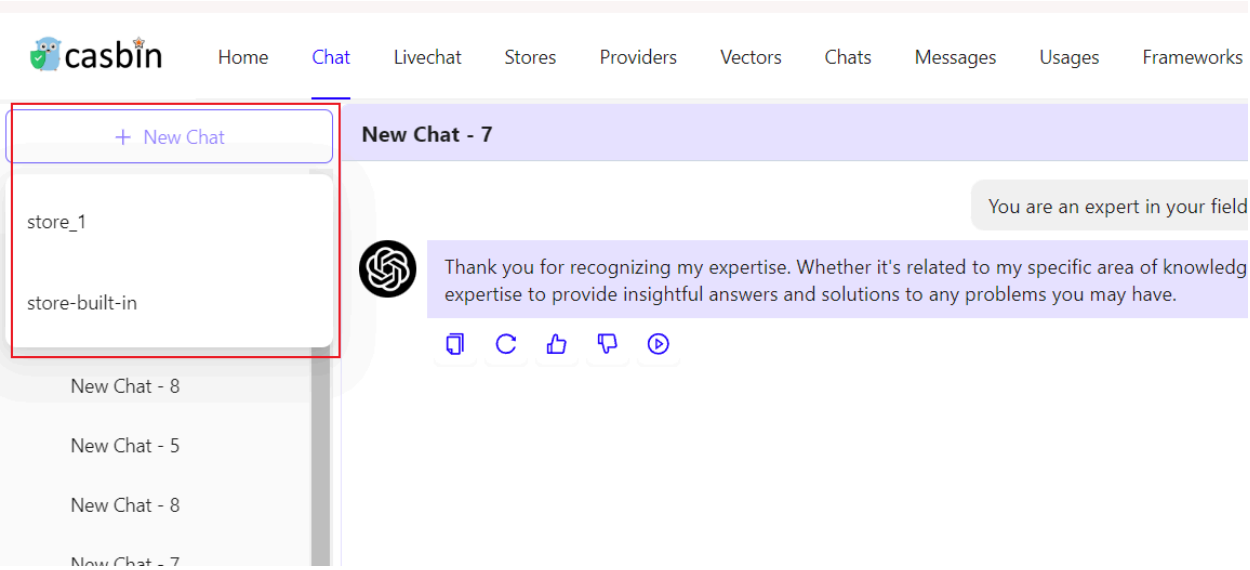


Step 2: Add Usable Stores

The multi-store mode only provides usable stores. To make a store usable, you need to configure its storage provider, model provider, and embedding provider.

Step 3: Select For Conversation

Casibase provides a very convenient method for selecting a store.



Just hover your mouse over "New Chat" and then you can select the Store you wish to use from the list that appears below.

If you click the "New Chat" button, the system will assign you a default Store.

Chats with AI

This document is a step-by-step tutorial designed for beginners. It will guide you through the process of implementing AI chat functionality in your Casibase knowledge base system.

Introduction

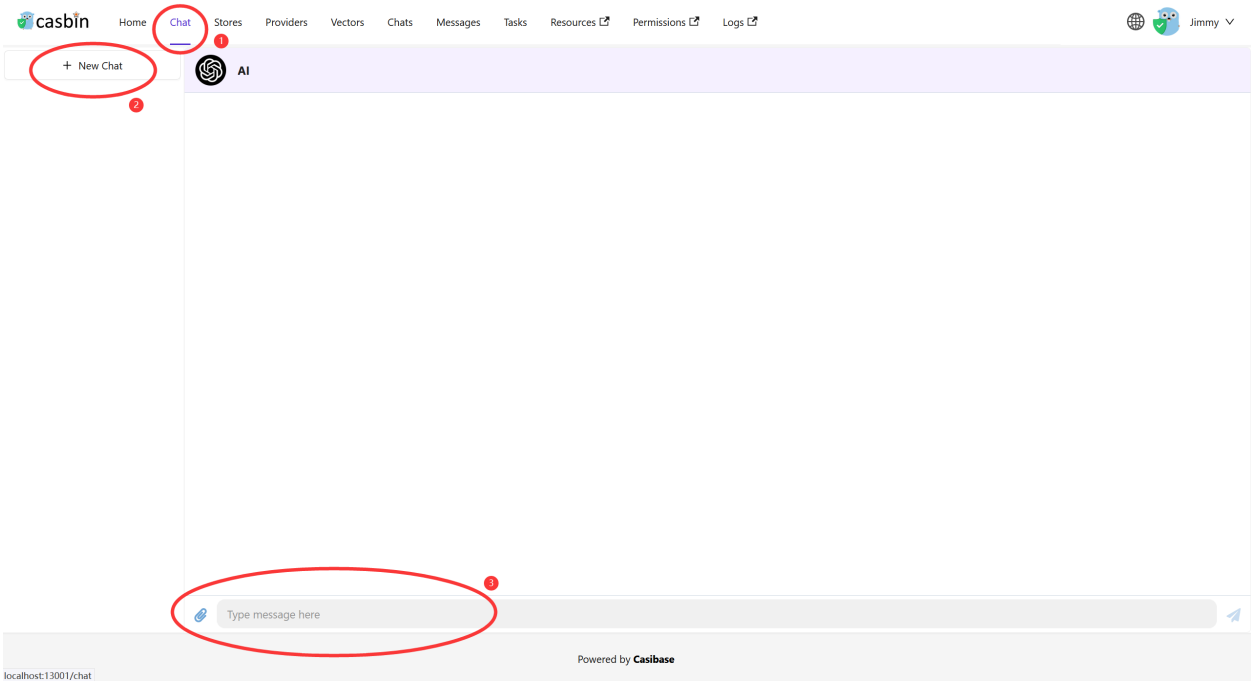
In previous sections, we have deployed Casdoor and Casibase, integrated a storage provider, a model provider, and a embedding provider with Casibase, and added a store to use these providers.

Refer to the Add a Store section of our previous documentation for more information about stores.

Now, let's implement AI chat functionality in Casibase.

Step 1: Add a New Chat

Click the `Chats` button on the home page and then click the `New Chat` button to add a chat.



Step 2: Send a Message

Write a message and click the `Send` button to send it.

Step 3: Knowledge Base Chat

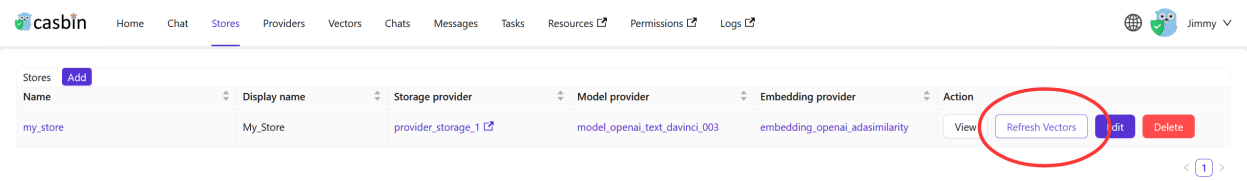
Additionally, you can chat with the chatbot in the knowledge base.

There are some requirements for the knowledge base chat:

- The knowledge base must have a store.
- The store must have a model provider.
- The store must have an embedding provider.

- The store must have a storage provider.
- The storage provider must have a readable document (e.g. a markdown file, docx file and pdf file).

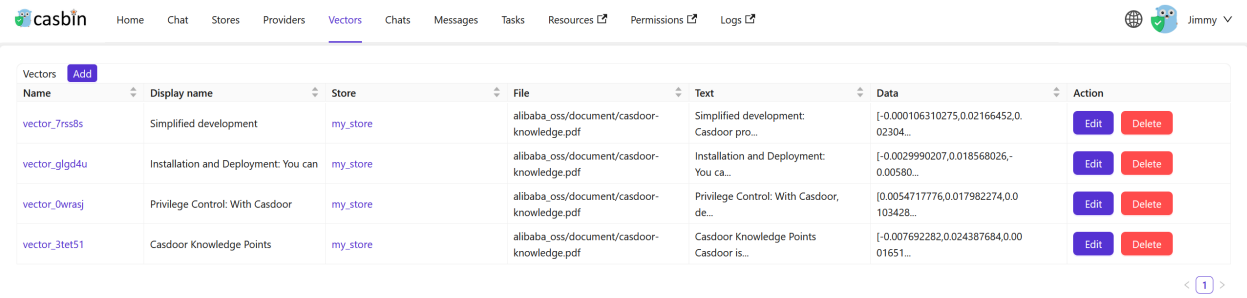
Once you have met these requirements, you can return to the `Stores` page and click the `Refresh Vectors` button to embedding the knowledge base data.



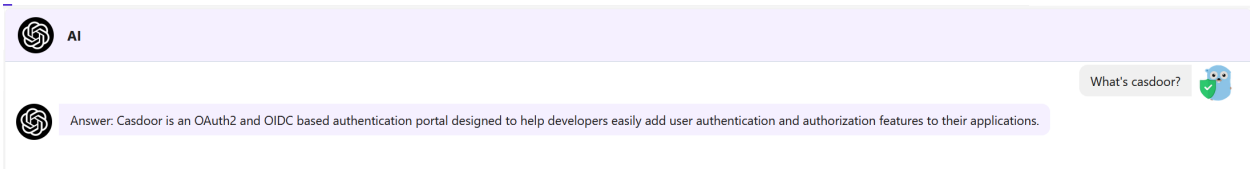
The button will be disabled when the embedding is in progress.

After the embedding is complete, you can click the `Vectors` button in the navigation bar to view the vectors.

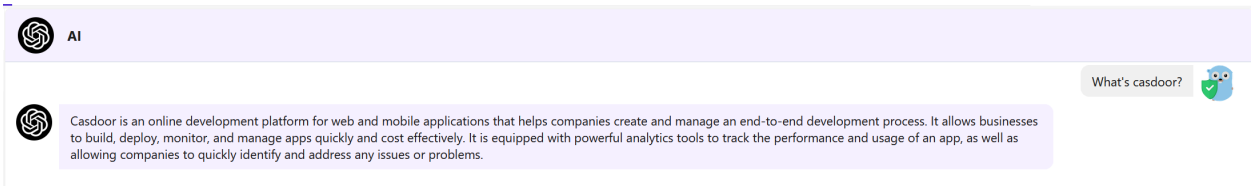
Result:



Let's **chat with the chatbot in the knowledge base.**



Compare the results with **non-knowledge base chat**:



> ⚠ CAUTION
>
> The embedding rate is related to two factors:
>
> - The documents in the knowledge base:
>   - Number of documents: The more documents, the longer the embedding time.
>   - Size of documents: The larger the document size, the longer the embedding time.
> - The embedding provider:
>   - API rate limit: The more API rate limit, the faster the embedding speed.
>   - API concurrency: The more API concurrency, the faster the embedding speed.
>
> For example, if you use the OpenAI API as the embedding provider, the embedding rate is related to the OpenAI API rate limit and concurrency.

Conclusion

In this guide, we have learned how to implement AI chat functionality in Casibase.

Now, you can chat with the chatbot in Casibase. Enjoy it!

More information about Casibase can be found in the Core Concepts section of our documentation.

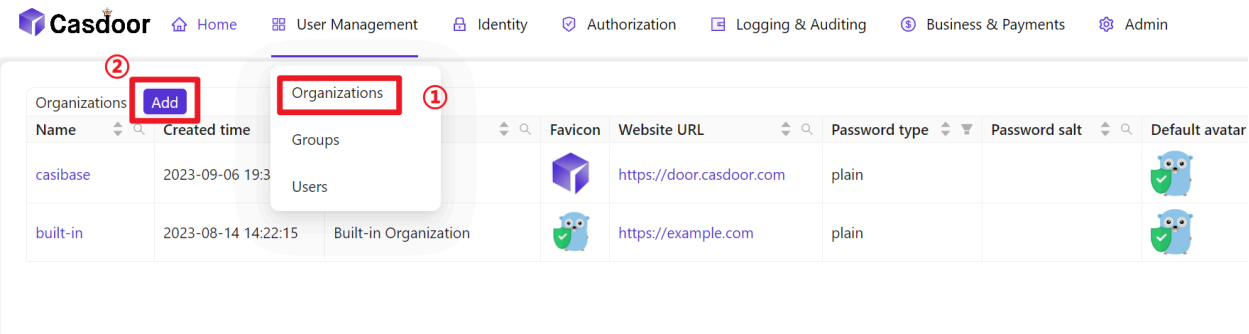
Casdoor-SSO

Casibase uses Casdoor as its identity and single-sign-on (SSO) provider. Make sure to deploy it in advance.

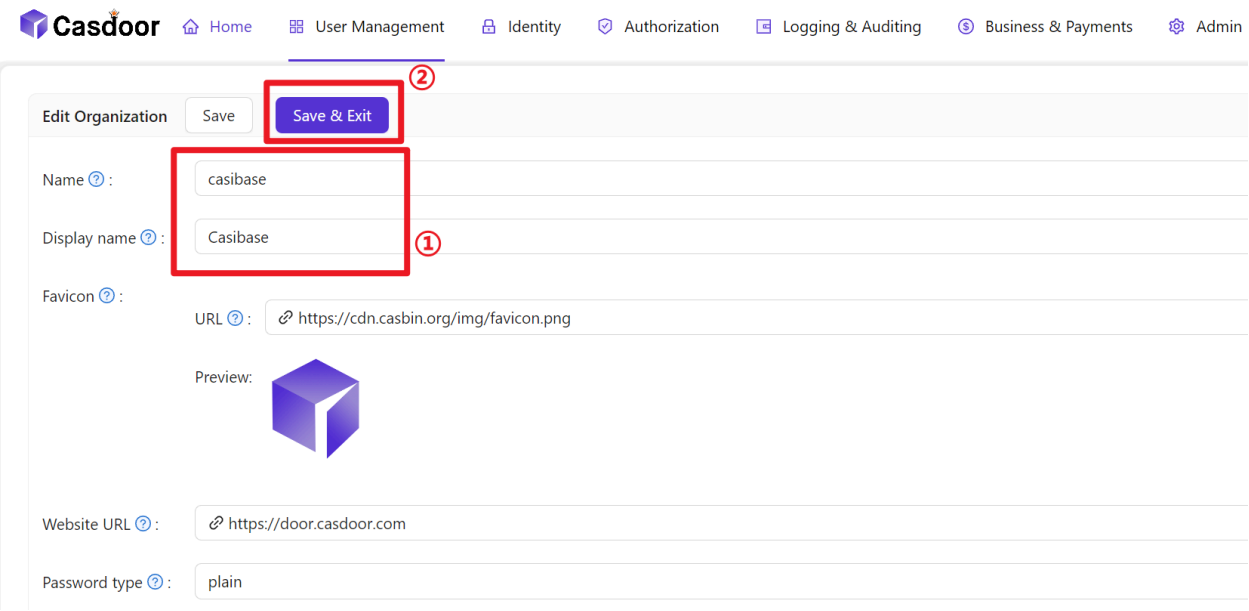
Please refer to Casdoor Server Installation to install and configure Casdoor.

Follow these steps to setup Casdoor for casibase:

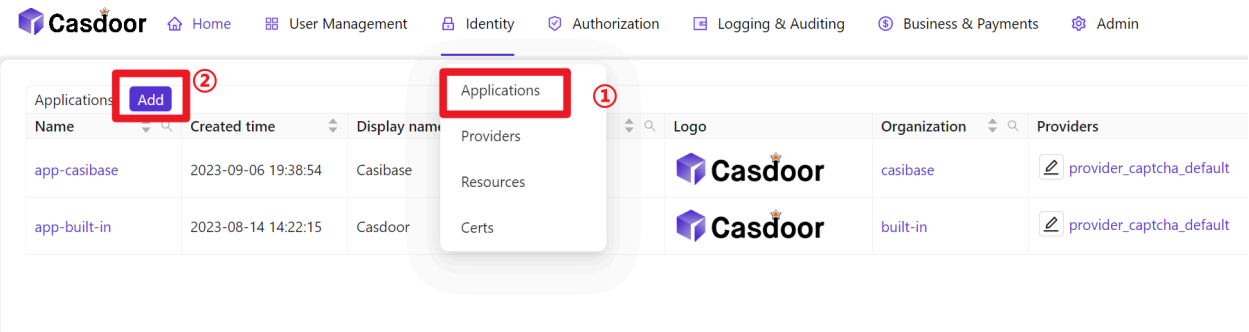
- Create an Organization



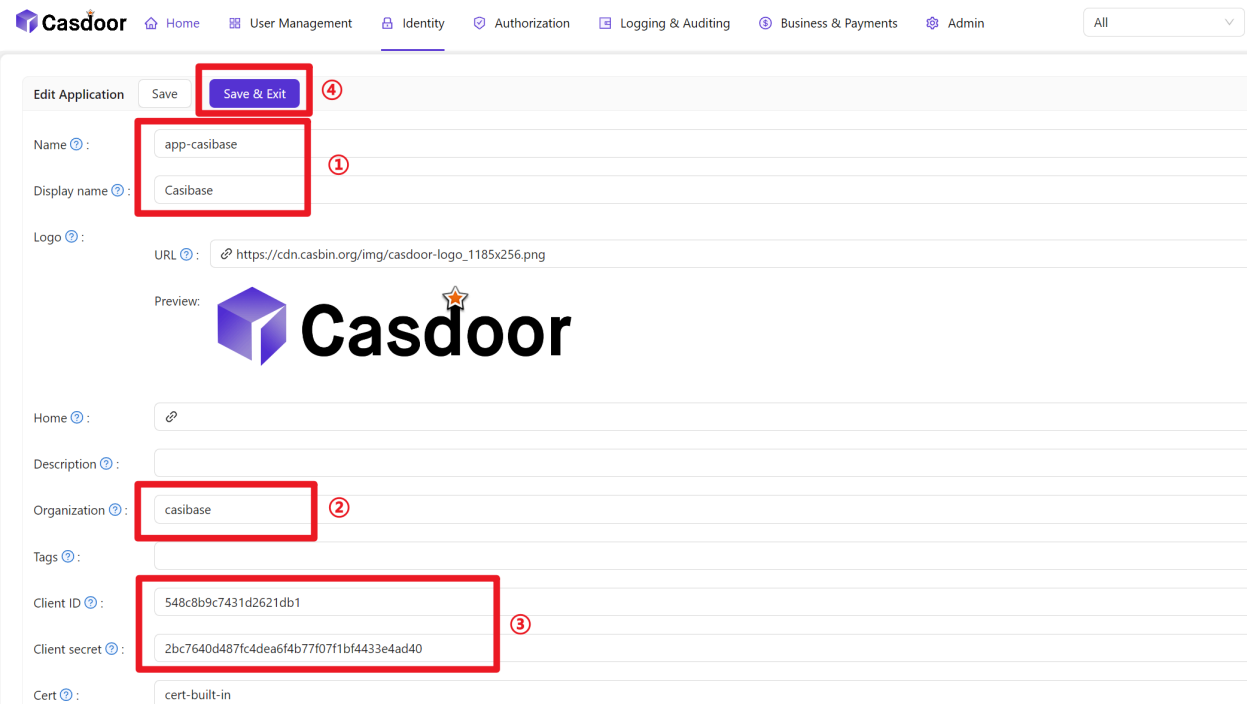
- Configure information about the Organization



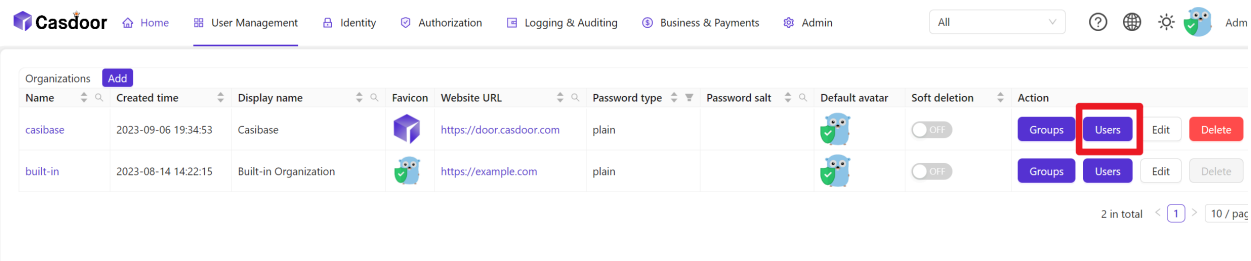
- Create a new Application

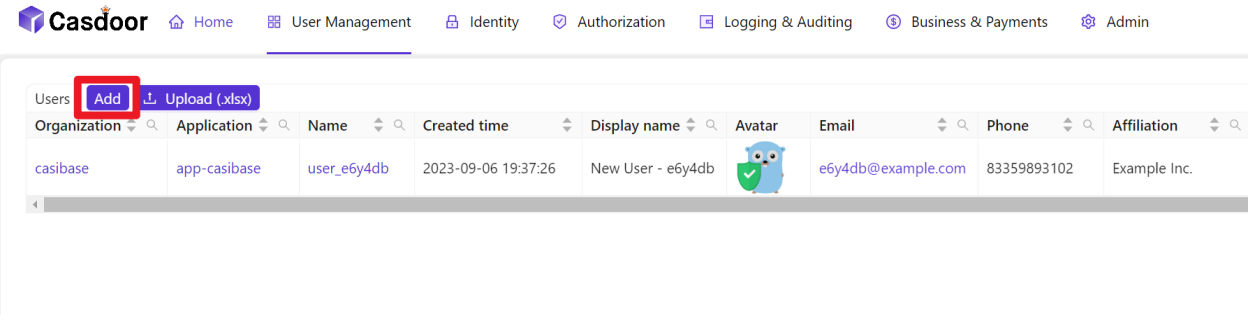


- Configuring Application Information (Remember Name, ClientID and ClientSecret)

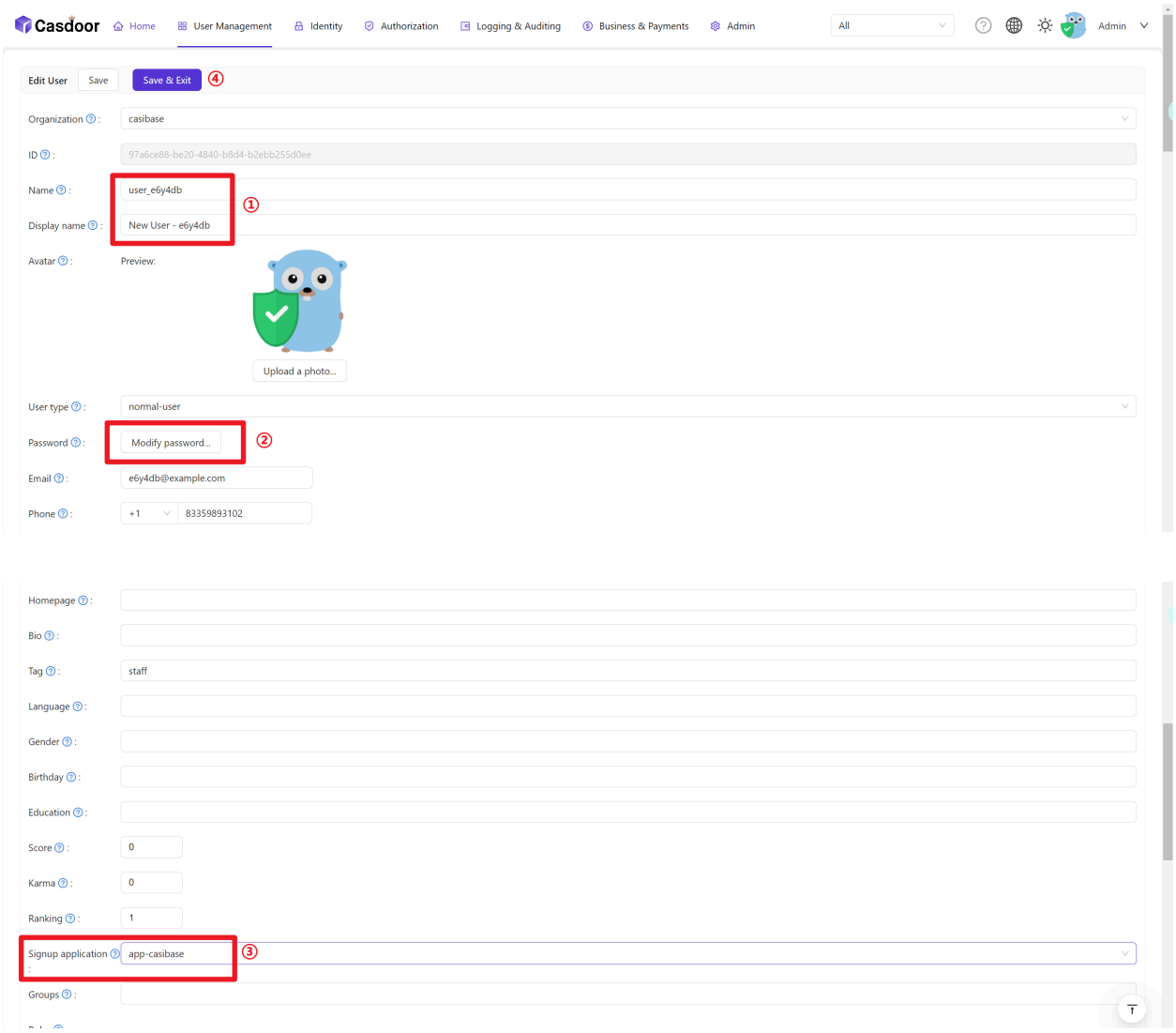


- Add a member to the newly created organization





- Configure member information (remember its Name as well as Password)


Casdoor
Home
User Management
Identity
Authorization
Logging & Auditing
Business & Payments
Admin
All
Admin
Edit User
Save
Save & Exit
④
Organization :
casibase
ID :
97a6ce88-be20-4840-b8d4-b2ebb255d0ee
Name :
user_e6y4db
①
Display name :
New User - e6y4db
Avatar :
Preview:
Upload a photo...
User type :
normal-user
Password :
Modify password...
②
Email :
e6y4db@example.com
Phone :
+1
83359893102
Homepage :
Bio :
Tag :
staff
Language :
Gender :
Birthday :
Education :
Score :
0
Karma :
0
Ranking :
1
Signup application :
app-casibase
③
Groups :

Deployment

📄 Deploy Casdoor and Casibase

Discover how to deploy Casdoor and Casibase.

Deploy Casdoor and Casibase

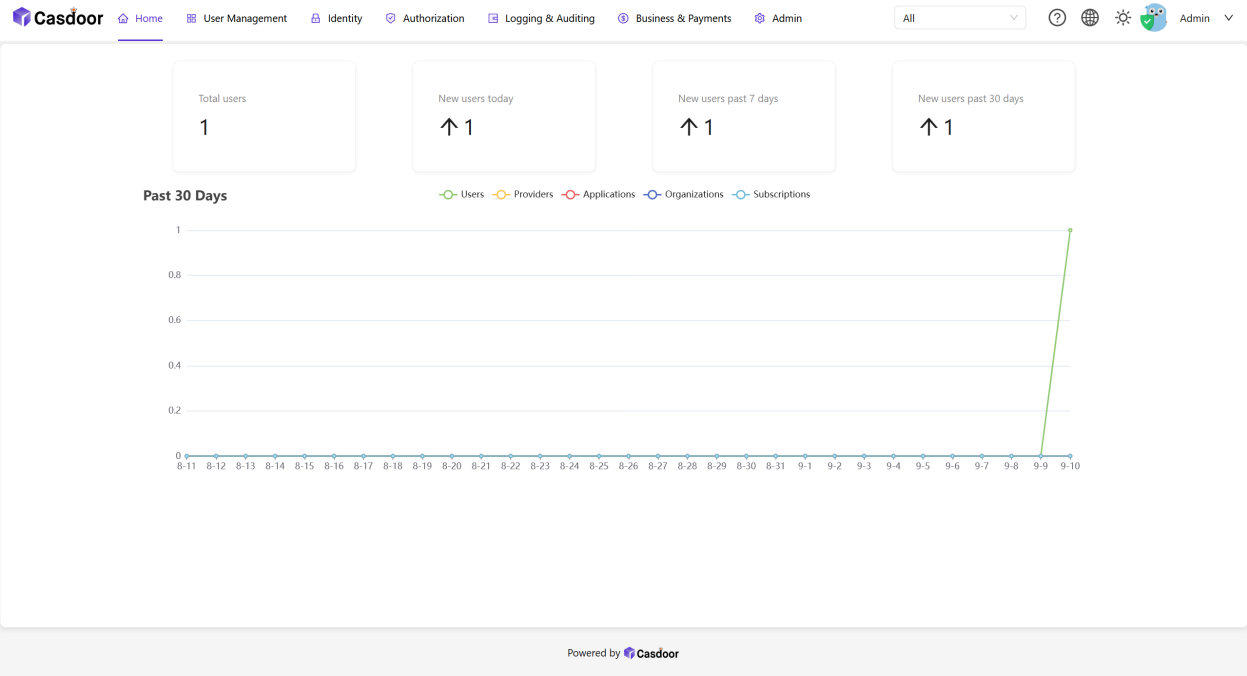
Introduction

> TIP
>
> What is Casdoor?
>
> Casdoor is a powerful authentication system that provides a secure and reliable login experience. It's a prerequisite for Casibase, so be sure to deploy it first.
>
> Refer to the Casdoor website for more information.

Step 1: Deploy Casdoor

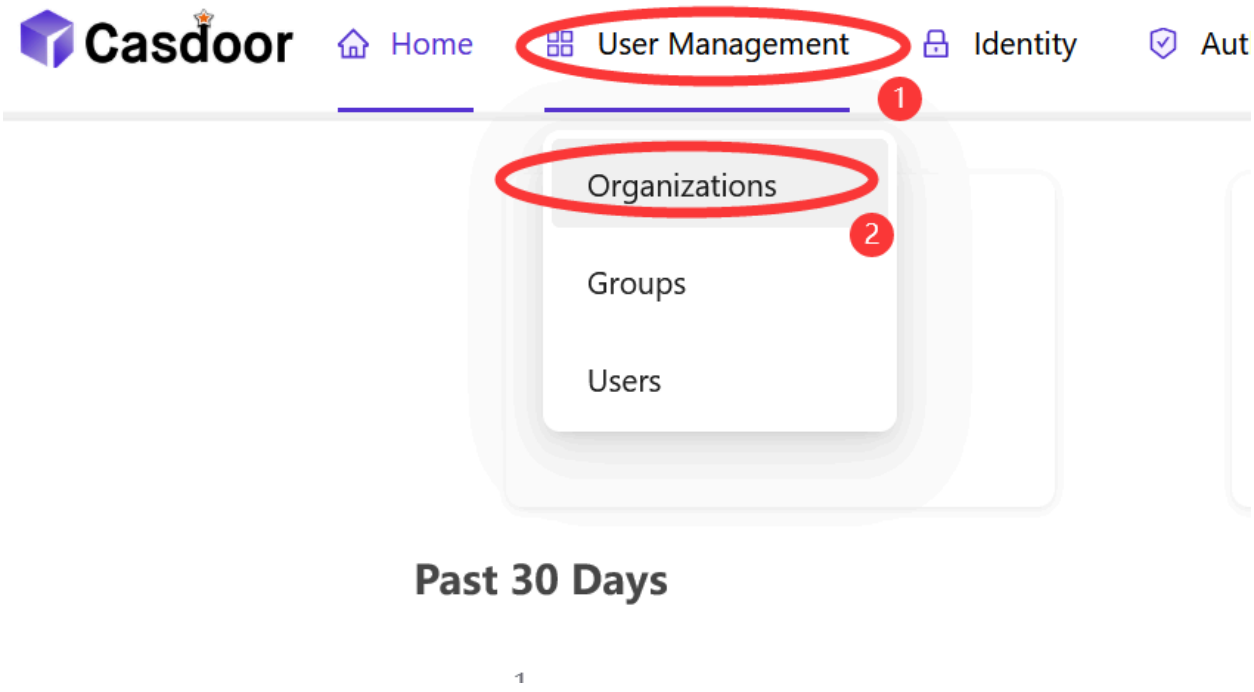
In Casdoor Deployment Guide, you can find the detailed steps to deploy Casdoor.

Once you've deployed Casdoor, you'll look like this:



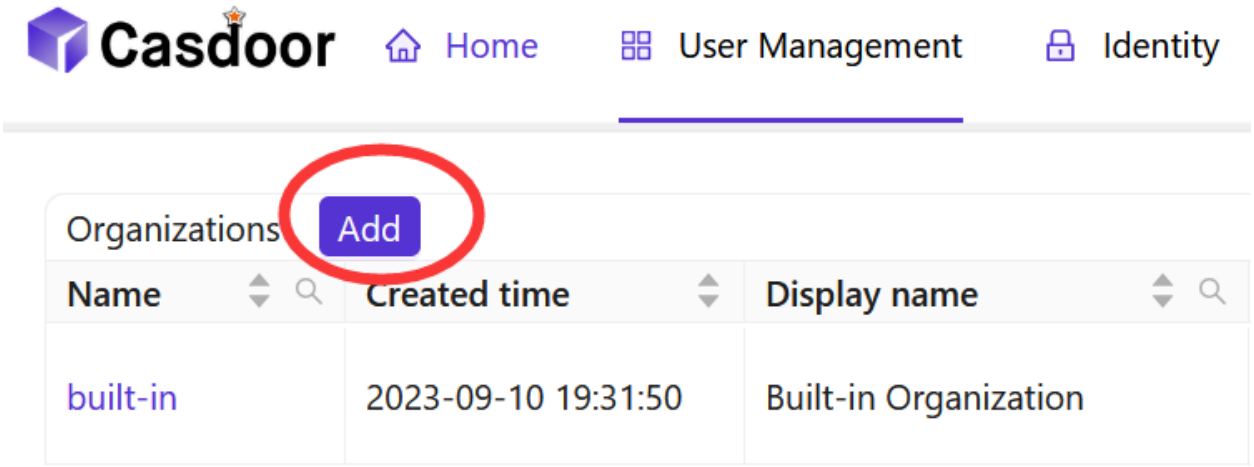
Step 2: Create an organization in Casdoor

In Casdoor, you can create an organization to manage your users and applications. You can create an organization by clicking the `User Management - Organizations` button on the home page.



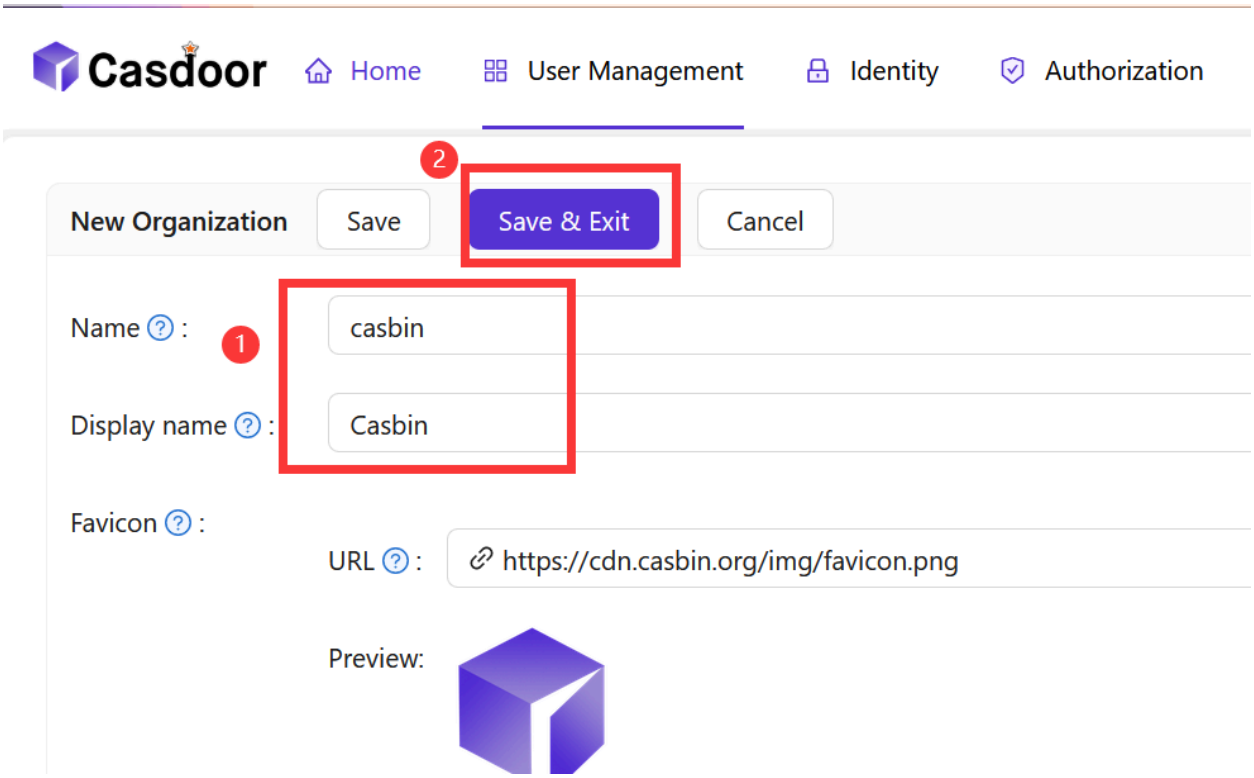
Step 2.1: Add an organization

Click the `Add` button to add an organization.



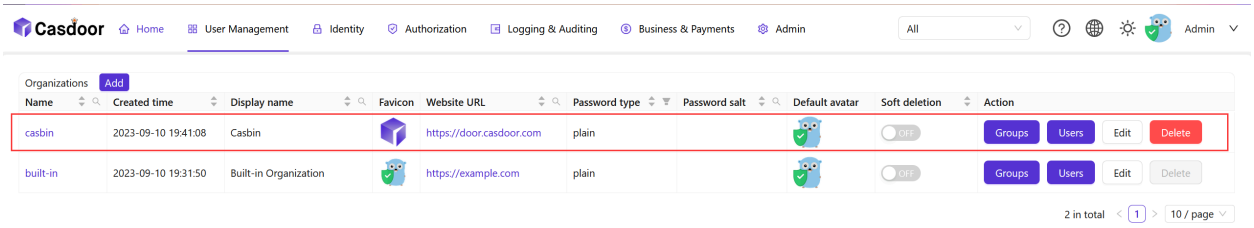
Step 2.2: Fill in the organization information

Fill in the organization information and click the `Save & Exit` button.



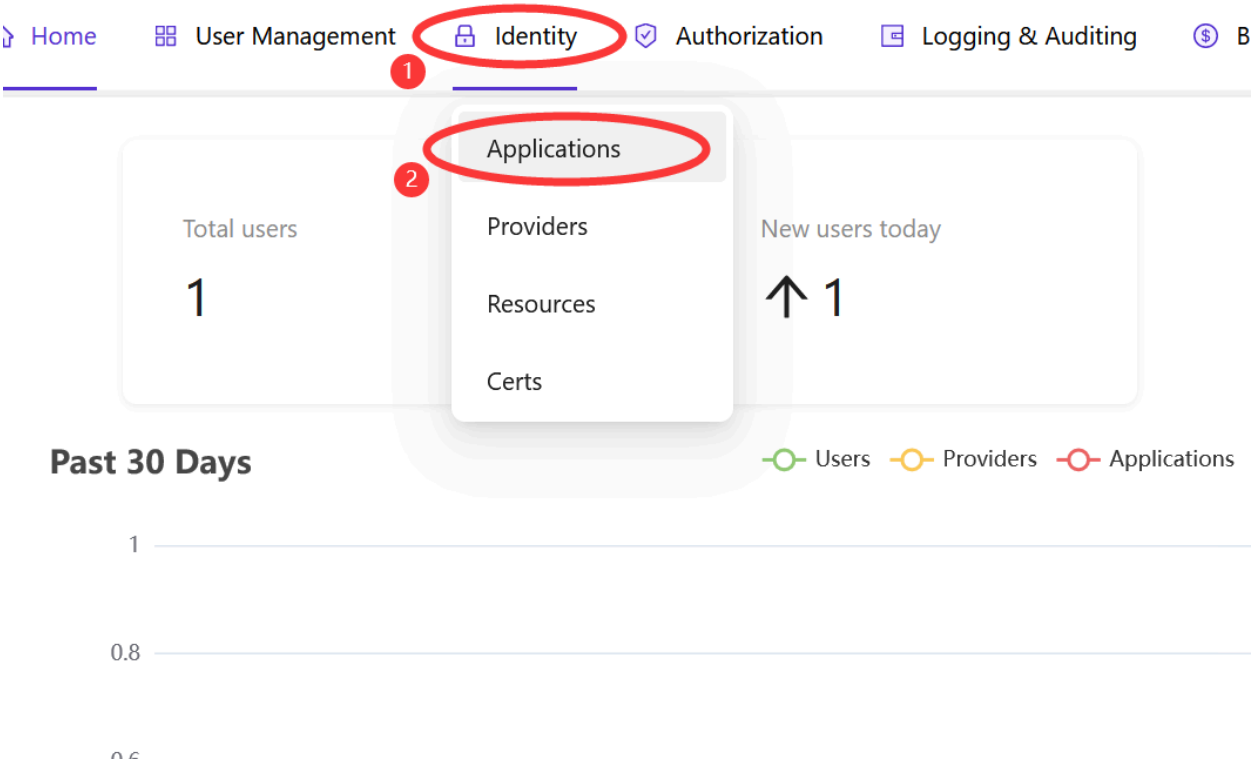
Step 2.3: View the organization

After adding the organization, you can view the organization information.



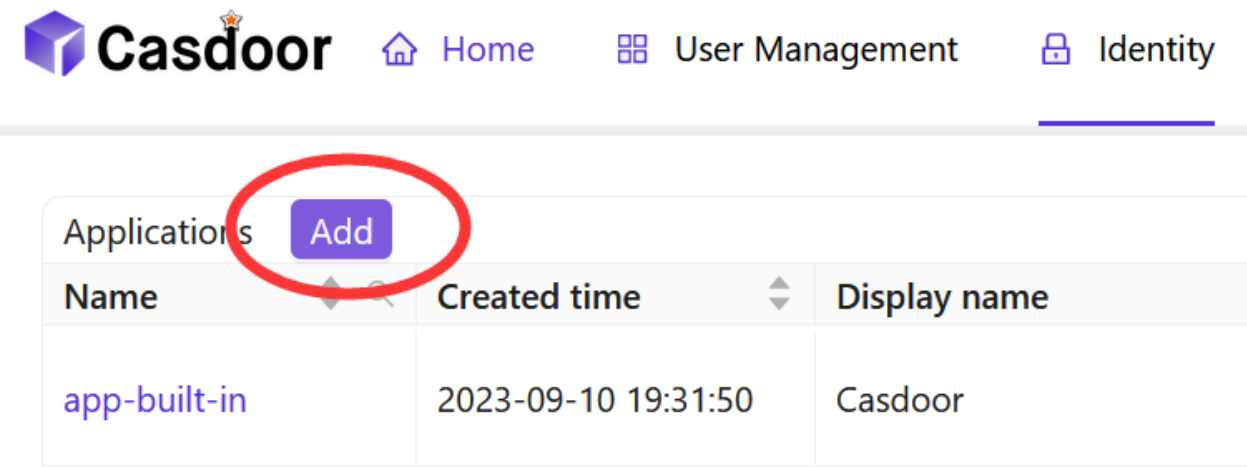
Step 3: Create an application in Casdoor

In Casdoor, you can create an application to manage your users and organizations. You can create an application by clicking the `Identity - Applications` button on the home page.



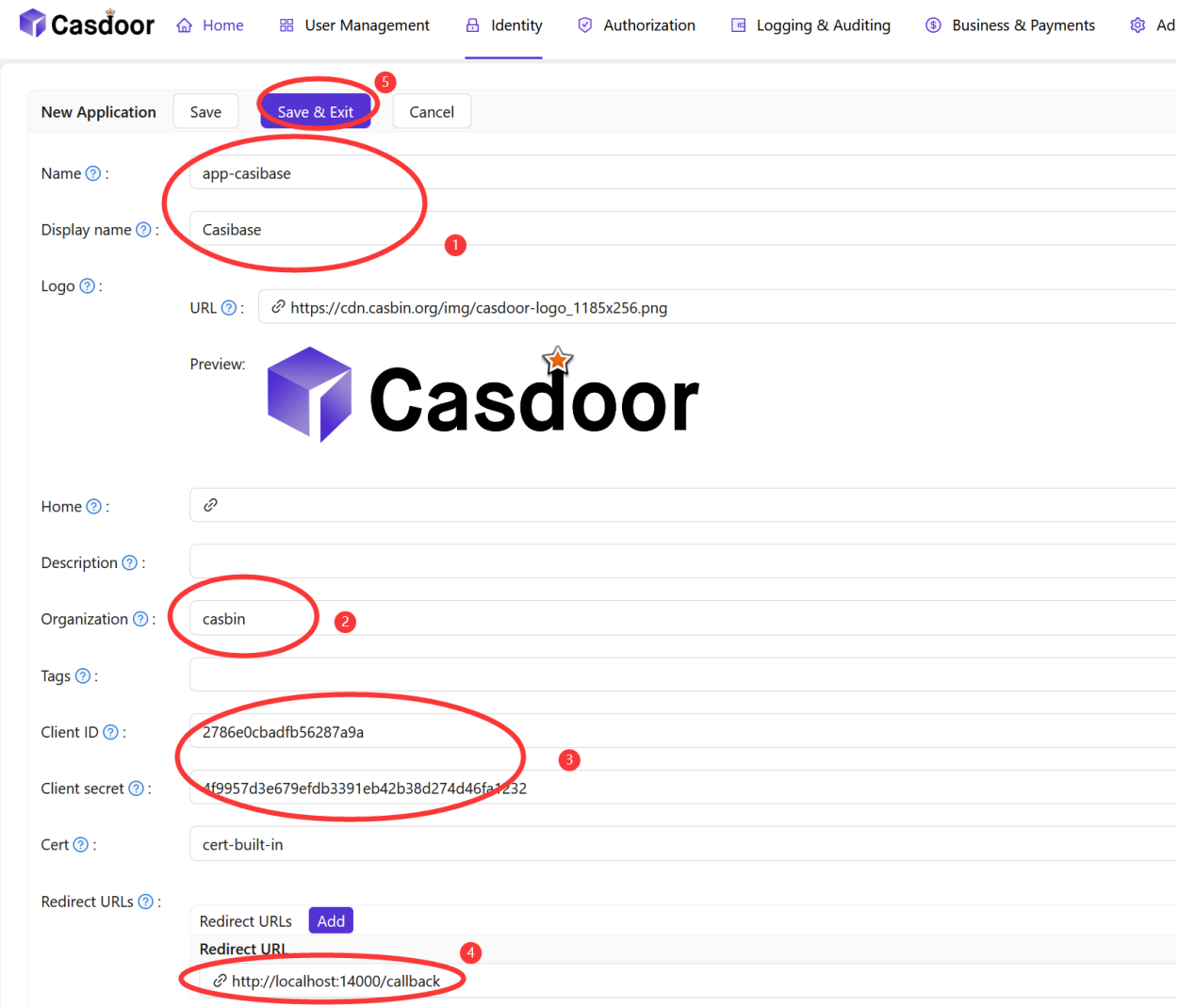
Step 3.1: Add an application

Click the `Add` button to add an application.



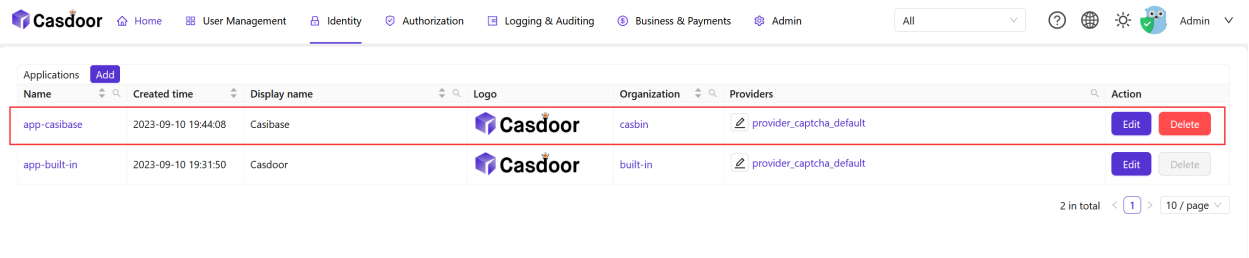
Step 3.2: Fill in the application information

Fill in the application information and click the `Save & Exit` button.



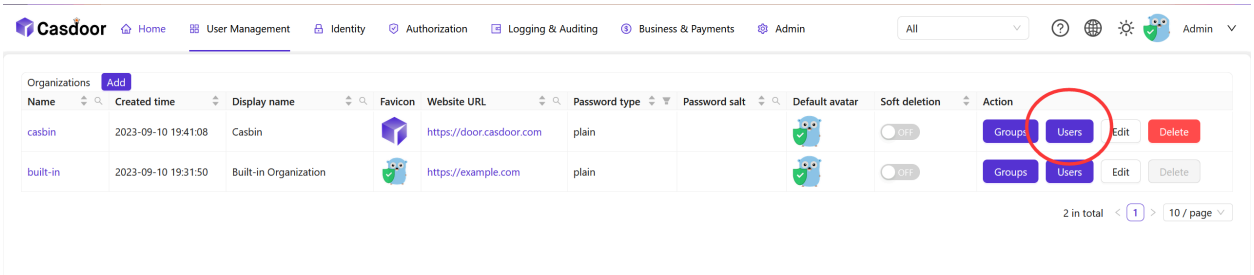
Step 3.3: View the application

After adding the application, you can view the application information.



Step 4: Create a user in Casdoor for Casibase

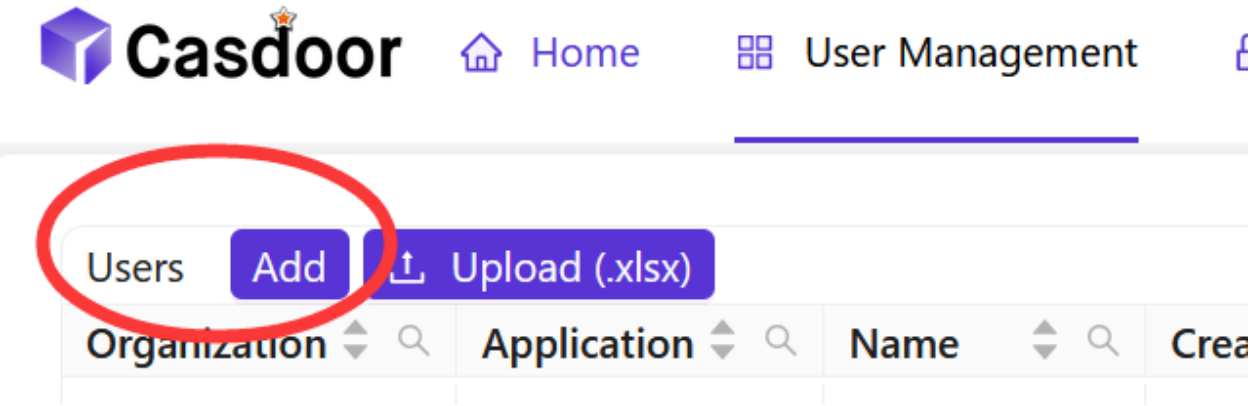
In Casdoor, you can create a user to login Casibase. You can create a user by clicking the `User Management - Organizations - Users` button from the home page.



> **TIP**
>
> A user is a member of an organization who can login to applications in the organization.
>
> Refer to the Casdoor website for more information.

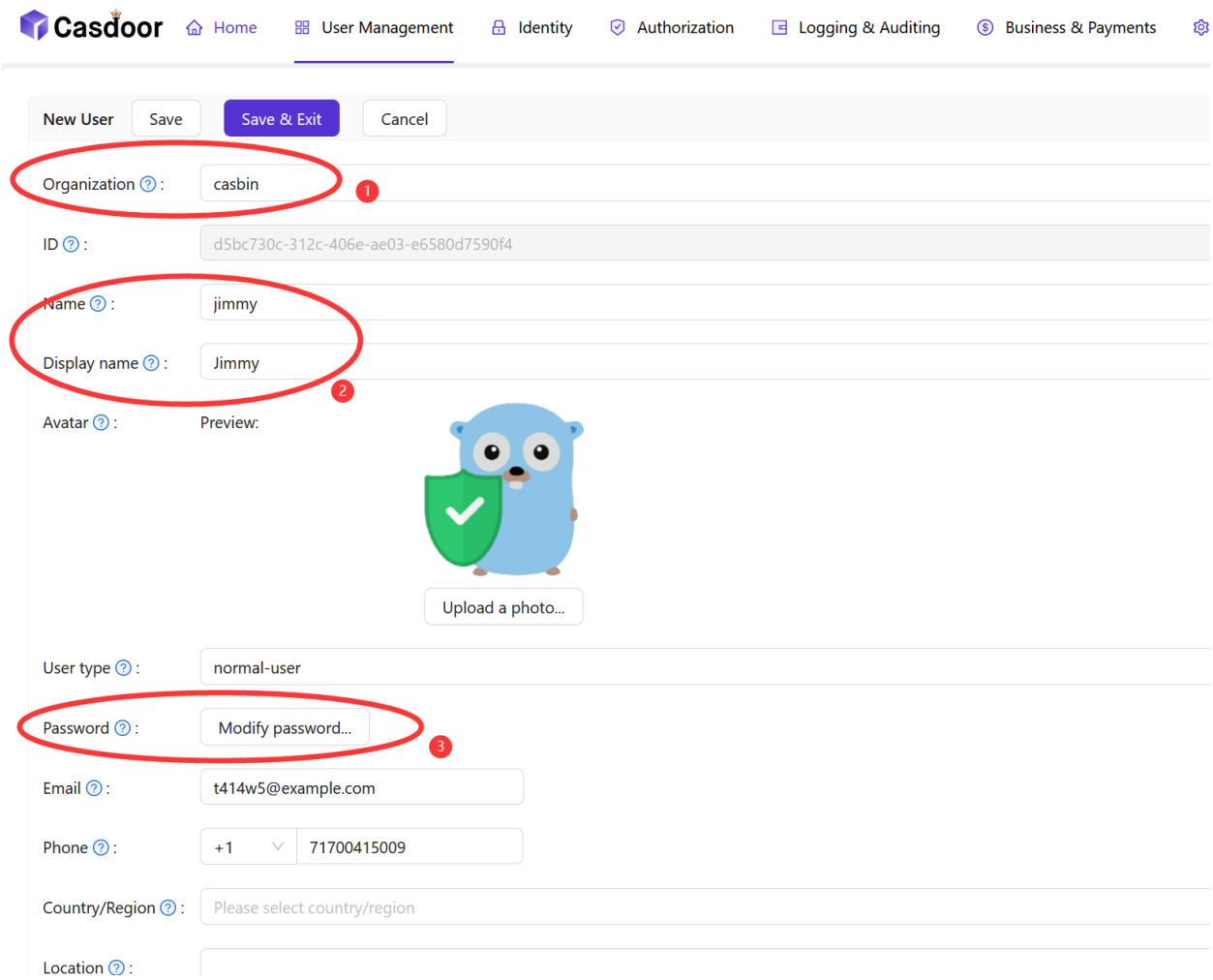
Step 4.1: Add a user

Click the `Add` button to add a user.



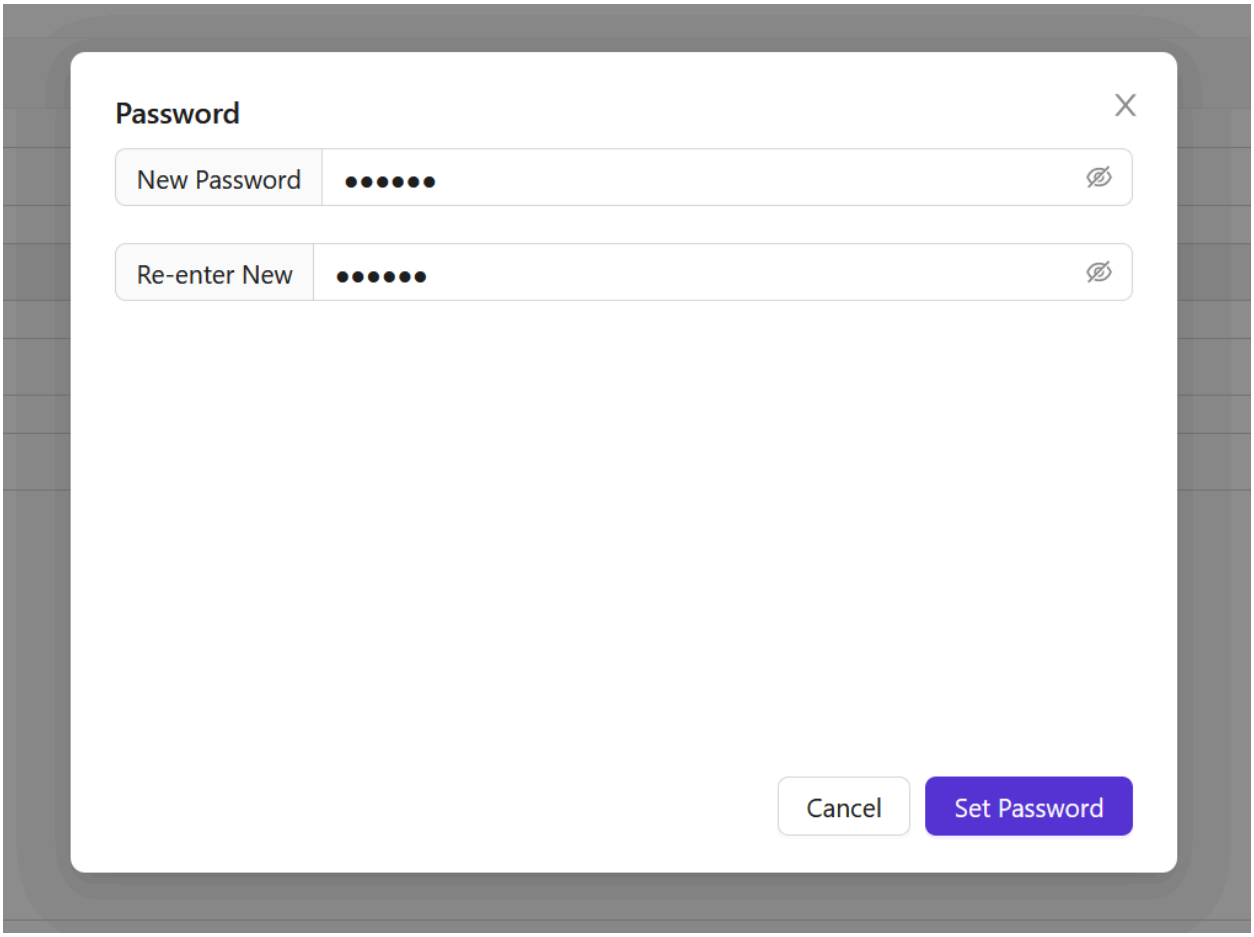
Step 4.2: Fill in the user information

Fill in the user information and click the `Save & Exit` button.



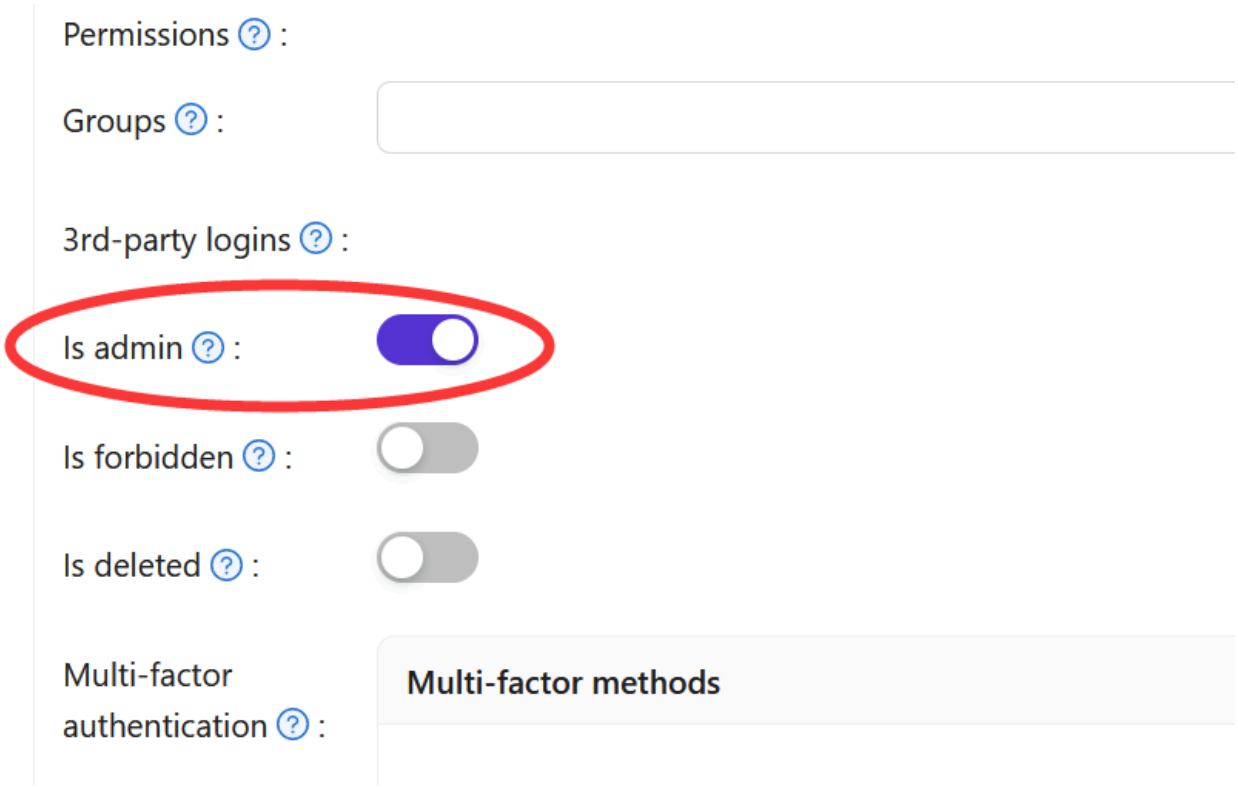
- Password

You can set the user's password by clicking the `Modify password` button.



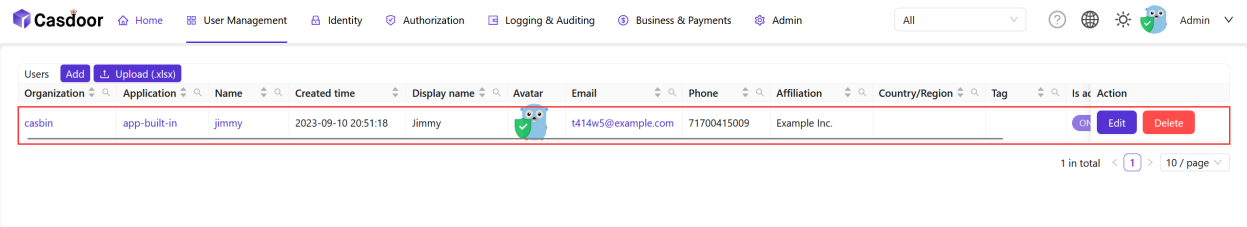
- Admin

You can set the user's admin permission by clicking the `Is admin` button.



Step 4.3: View the user

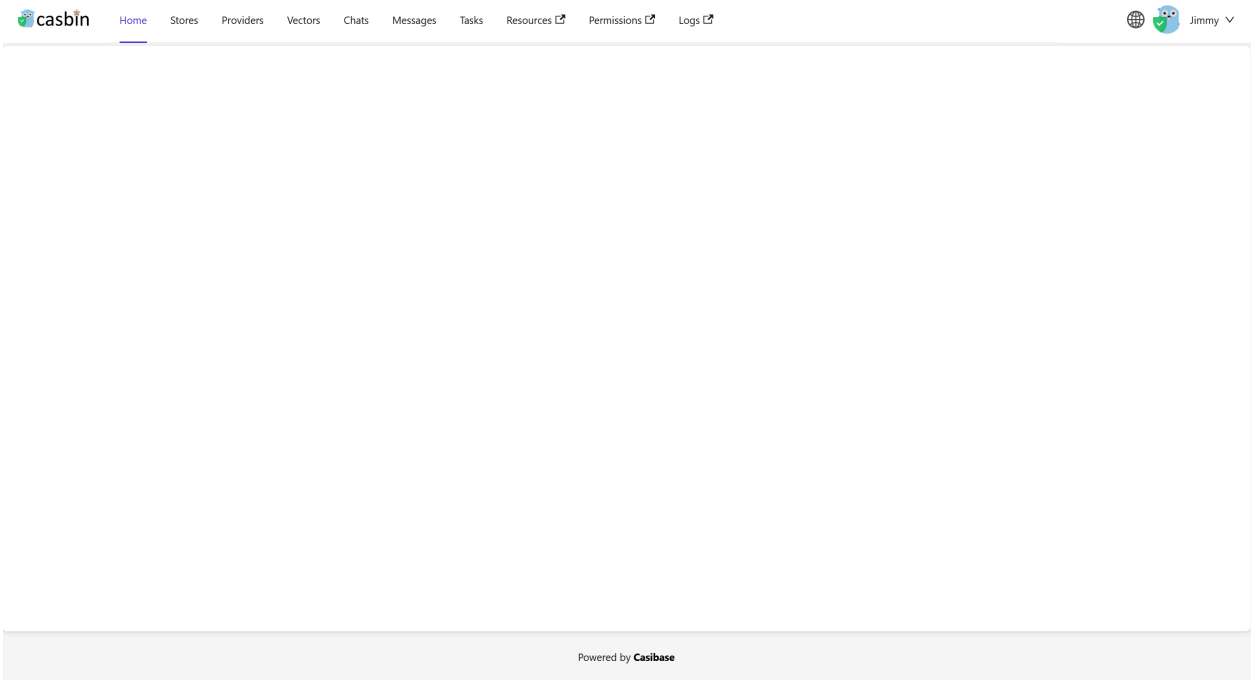
After adding the user, you can view the user information.



Step 5: Deploy Casibase

Like Casdoor, you can deploy Casibase by following the Casibase Deployment Guide.

Once you've deployed Casibase, you'll look like this:


casbin
Home
Stores
Providers
Vectors
Chats
Messages
Tasks
Resources
Permissions
Logs
Jimmy
Powered by Casibase

How to Connect to Casibase

📄 Overview

Learn about different ways to connect to and integrate with Casibase.

📄 Casibase SDKs

Learn how to integrate and use Casibase SDKs with your applications.

📄 Using Casibase OpenAI API Compatible Interface

Learn how to connect external chat UIs to Casibase using OpenAI API compatibility.

Overview

Overview

In this section, we will show you how to connect your application to Casibase.

Casibase provides two main methods for integrating with your applications:

- `Casibase SDK` - For direct integration with Casibase's API
- `OpenAI API Compatibility` - For connecting existing OpenAI-compatible UIs and clients

Casibase SDK

What is Casibase SDK?

Casibase SDK provides a programmatic way to interact with Casibase services. It offers a convenient set of APIs that allow developers to manage tasks, knowledge bases, and other features of Casibase directly from their applications.

We recommend using the Casibase SDK for the following reasons:

1. It provides direct access to Casibase-specific functionality
2. It simplifies authentication and configuration
3. It handles error cases and provides a more developer-friendly experience

Currently, Casibase offers a Java SDK, with more language support planned for the future.

OpenAI API Compatibility

What is OpenAI API Compatibility?

Casibase supports the OpenAI API format, allowing you to connect any OpenAI-compatible chat UI or client application to Casibase. This makes it easy to use popular open-source chat interfaces with Casibase's backend.

We recommend using the OpenAI API compatibility for the following reasons:

1. It allows you to use your preferred chat UI with Casibase
2. It simplifies integration if you're already using OpenAI-compatible tools
3. It provides a standardized way to interact with Casibase's AI capabilities

This approach is particularly useful if you want to quickly integrate Casibase with existing applications that already support the OpenAI API format.

Casibase SDKs

Introduction

Casibase provides SDKs to help developers integrate with Casibase's APIs more easily. The SDKs offer a convenient way to interact with Casibase's services for tasks like managing AI conversations, knowledge bases, and more.

Currently, Casibase offers a Java SDK, with more language support planned for the future.

Backend SDK	Description	SDK code	Example code
Java SDK	For Java backends	casibase-java-sdk	-

How to use Casibase SDK?

1. Backend SDK configuration

When your application starts up, you need to initialize the Casibase SDK config by providing the required parameters.

Take casibase-java-sdk as an example:

```
CasibaseConfig config = new CasibaseConfig(
    "https://demo-admin.casibase.com",  // endpoint
    "your-client-id",                   // clientId
    "your-client-secret",               // clientSecret
```

All the parameters for initialization are explained as follows:

Parameter	Required	Description
endpoint	Yes	Casibase Server URL, like https://demo-admin.casibase.com or http://localhost:14000
clientId	Yes	Client ID for the Casibase application
clientSecret	Yes	Client secret for the Casibase application
organizationName	Yes	The name for the Casibase organization, e.g., casbin
applicationName	No	The name for the Casibase application, e.g., app-casibase

2. Available Services

Once you have initialized the configuration, you can create and use the available services. Currently, the only available service is `TaskService`.

```
TaskService taskService = new TaskService(config);
```

TaskService

`TaskService` supports basic task operations, such as:

- `getTask(String name)`: Get a single task by task name.
- `getTasks()`: Get all tasks under the organizationName.

- `addTask(Task task)`: Add a new task to the database.
- `updateTask(Task task)`: Update an existing task in the database.
- `deleteTask(Task task)`: Delete a task from the database.

Using Casibase OpenAI API Compatible Interface

This document is a step-by-step tutorial designed for beginners. It will guide you through the process of connecting external chat UIs to Casibase using its OpenAI API compatibility feature.

Introduction

Casibase now supports integration with external chat UIs through OpenAI API compatibility. This feature allows you to use popular open-source chat interfaces with Casibase's backend, giving you more flexibility in how you interact with your knowledge base system.

If you're looking to use your preferred chat UI with Casibase, this guide will walk you through the simple setup process.

Step 1: Set Up Casibase with a Model Provider

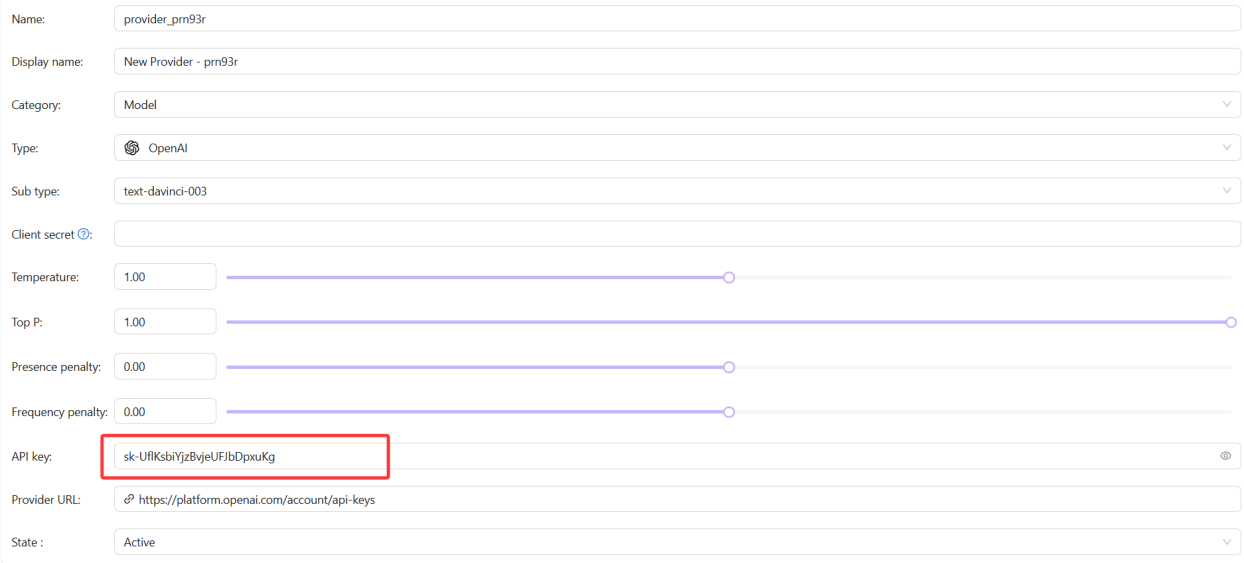
Before connecting an external UI, ensure you have Casibase properly set up with a model provider. If you haven't done this yet, please refer to the Add an AI Model Provider tutorial.

Step 2: Get Your OpenAI-compatible API Key

When you create a model provider in Casibase, an API key is automatically generated. This key allows external applications to communicate with Casibase using the OpenAI API format.

Step 2.1: Access Your API Key

Navigate to the `Providers` section and select your model provider. Only administrators can view and modify API keys.



> **TIP**
>
> If the API key field is empty, Casibase will automatically generate a new key when you save the provider.

Step 3: Configure Your External Chat UI

Once you have your API key, you can configure your external chat UI to connect to Casibase.

Step 3.1: Configure with chatgpt-web

For this example, we'll use chatgpt-web, a popular open-source ChatGPT interface.

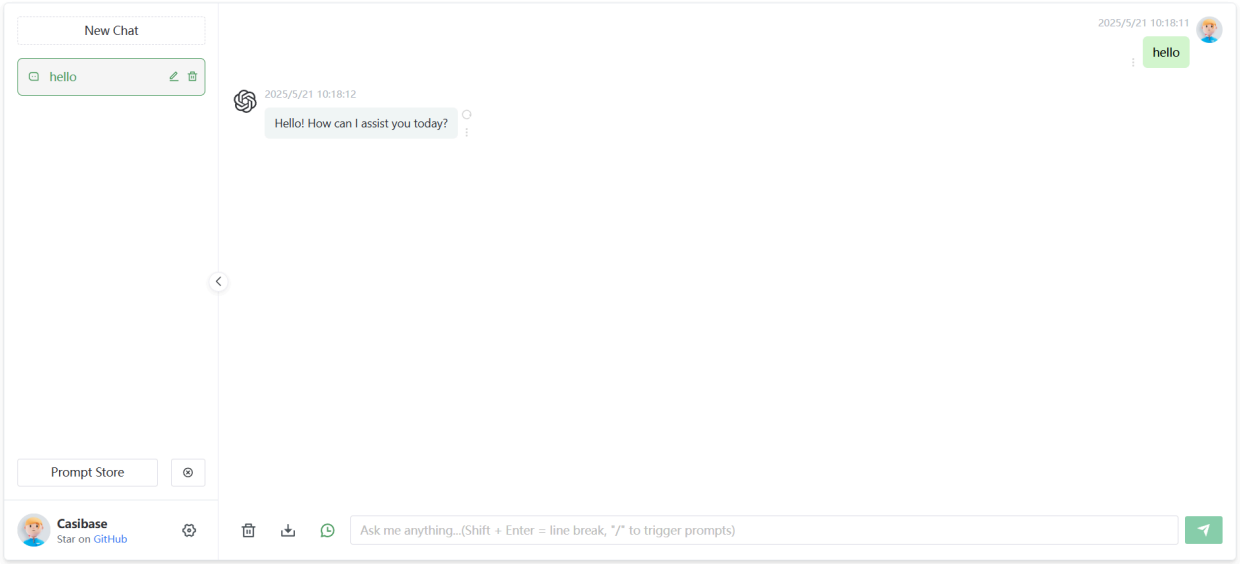
1. Locate the `service/.env` file in your chatgpt-web installation
2. Modify the following variables:
    - `OPENAI_API_KEY`: Set this to your Casibase-generated API key
    - `OPENAI_API_BASE_URL`: Set this to `http://your-casibase-backend:port/api`

```
# Example configuration
OPENAI_API_KEY=sk-UflKsbiYjzBvjeUFJbDpxuKg
OPENAI_API_BASE_URL=http://localhost:14000/api
```

Make sure your Casibase backend is accessible from the machine running your chat UI. Check firewall settings if you encounter connection issues.

Step 4: Test Your Integration

Start your chat UI application and test the connection. You should now be able to interact with Casibase through your preferred interface. If everything is set up correctly, you should see responses from Casibase in your chat UI.



Compatible Chat UIs

Casibase's OpenAI API compatibility has been tested with these popular chat interfaces:

- chatgpt-web

Other chat UIs that use the standard OpenAI API format should also work with Casibase.

Providers

Overview

Providers Overview

Model Providers

Introduction

Embedding Providers

Introduction

Storage Providers

Introduction

Text-to-Speech Providers

Introduction

Speech-to-Text Providers

Introduction

Overview

Casibase is an open source AI knowledge base system designed to provide efficient and flexible knowledge management and dialogue solutions for enterprises. One of its core features is Providers, which allow users to integrate multiple AI models and storage services to enhance the functionality and performance of the system: Providers are classified into three main categories: Model Providers, Embedding Providers, and Storage Providers, where Model Providers and Embedding Providers are collectively referred to as AI Providers, which, together with Storage Providers, are responsible for handling the AI models and data storage, respectively.

1. Model Providers

Model Providers is a component in Casibase for integrating and managing AI models. It allows users to integrate various pre-trained AI models into the system for smarter knowledge processing and dialogue generation. With Model Provider, users can easily switch between different AI models, choosing the most appropriate model according to specific needs.

Casibase supports a variety of popular AI models, including but not limited to:

Model Provider Types

- Hugging Face: e.g. meta-llama/Llama-2-7b, THUDM/chatglm2-6b
- OpenAI: e.g. gpt-3.5-turbo, gpt-4
- Claude: e.g. claude-2, claude-instant-v1
- Ernie: e.g. ERNIE-Bot, ERNIE-Bot-turbo

2. Embedding Providers

Data vectorisation

The main role of Embedding Providers is to transform various types of data (e.g., text, images, etc.) into dense vector representations. This transformation is a key step in data processing and analysis in Casibase, enabling data to be stored, retrieved and analysed in a more efficient manner.

Knowledge Retrieval

By converting both the data in the knowledge base and the user's query into vectors, Embedding Providers enables the system to perform fast knowledge retrieval based on vector similarity. This greatly improves the efficiency and accuracy of knowledge base retrieval.

Flexible model support

Embedding Providers support a variety of embedding models, users can choose the most suitable model according to their needs.

3. Storage Providers

We can configure the storage providers in Casdoor. and use it in Casibase, which is the component used to manage Casibase data storage and retrieval. It allows users to store data in different storage services and access the data through a unified interface. With Storage Providers, users can flexibly choose storage services to ensure data security and efficient access. supports two types of storage: Local and Cloud.

4. Text-to-Speech Providers

Text-to-Speech (TTS) Providers is a component in Casibase that enables the conversion of text responses into natural-sounding speech. It allows the system to communicate with users through voice synthesis, enhancing the interactive experience of the knowledge base system.

Provider Support

Currently, Casibase supports Alibaba Cloud's Text-to-Speech service, with various voice options available through the cosyvoice-v1 interface. The system is designed to be extensible, allowing for the integration of additional TTS providers in the future.

5. Speech-to-Text Providers

Speech-to-Text (STT) Providers is a component in Casibase that enables the conversion of spoken language into written text. It allows the system to understand and process voice queries, enhancing the interactive experience of the knowledge base system.

Local

We support uploading files to the local system.

Cloud

We support AWS S3, Azure Blob Storage, MinIO, Alibaba Cloud OSS, Tencent Cloud COS, and we are constantly adding more Cloud storage services.

Model Providers

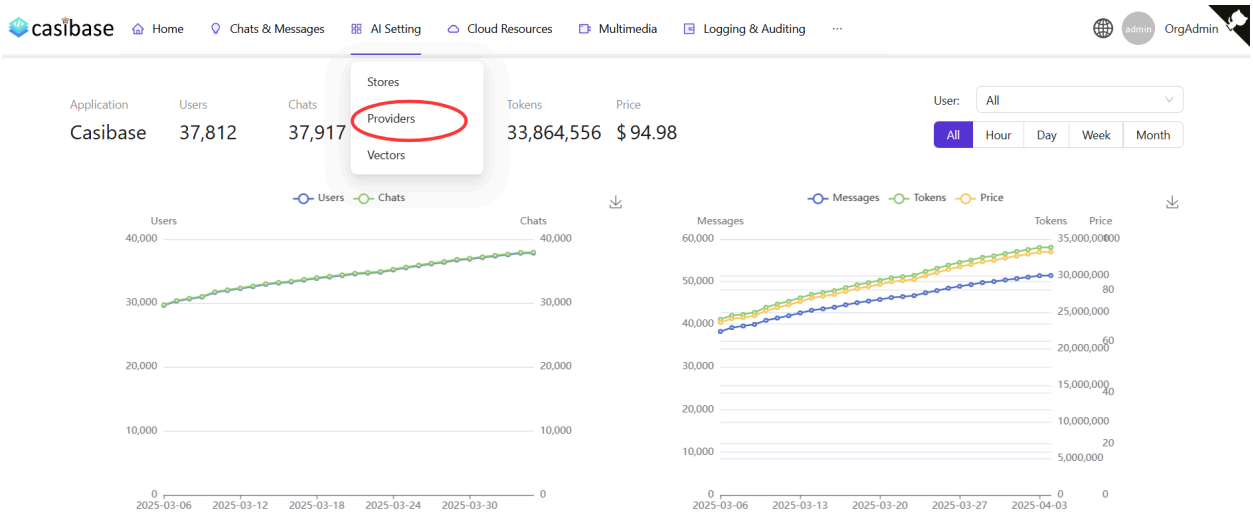
Introduction

Adding a model provider to Casibase enables you to enhance its functionality by incorporating machine learning models and AI capabilities. Model providers allow you to analyze and process data within your knowledge base system, making it more intelligent and efficient.

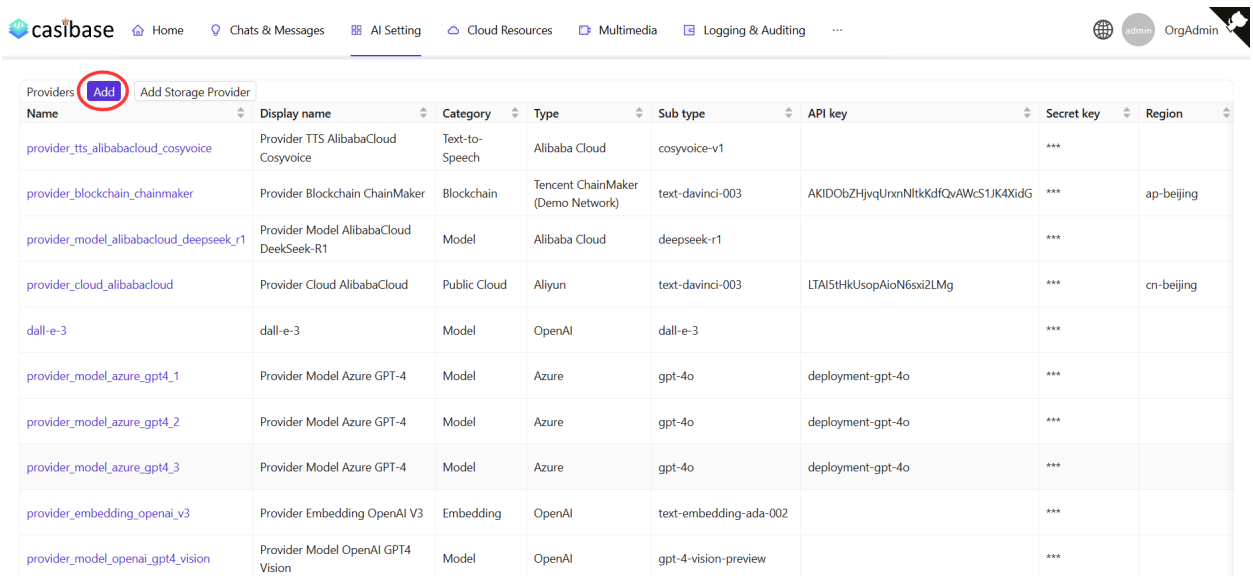
Add a Model Provider

Model providers are used to integrate LLM into Casibase. You can add them by following these steps:

Click the `Providers` button on the home page.

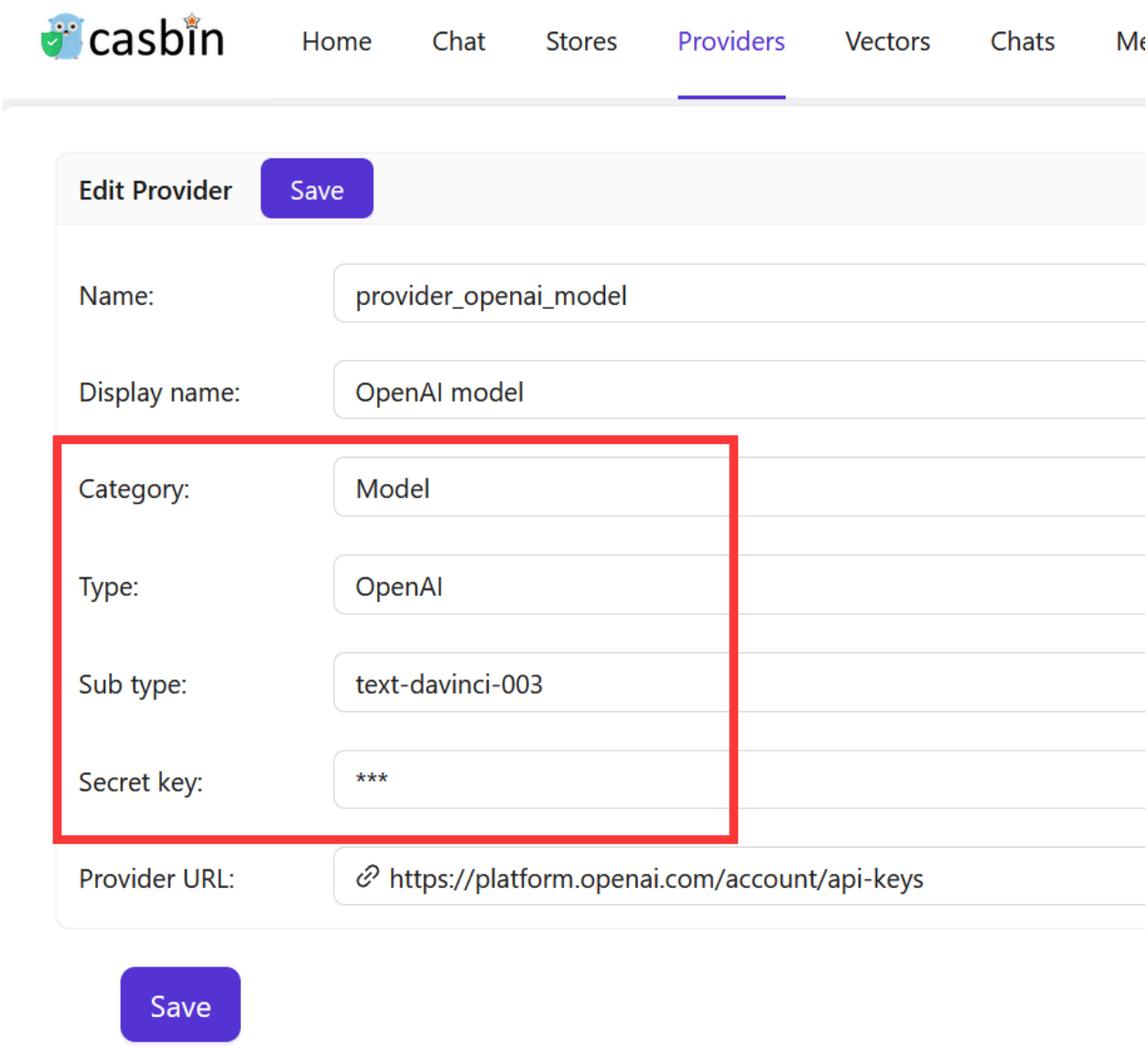


Click the `Add` button to add a model provider.



Fill in Model Provider Details

Fill in the model provider details and click the `Save & Exit` button.



TIP

Casibase supports many model providers, including:

- Hugging Face
  - meta-llama/Llama-2-7b

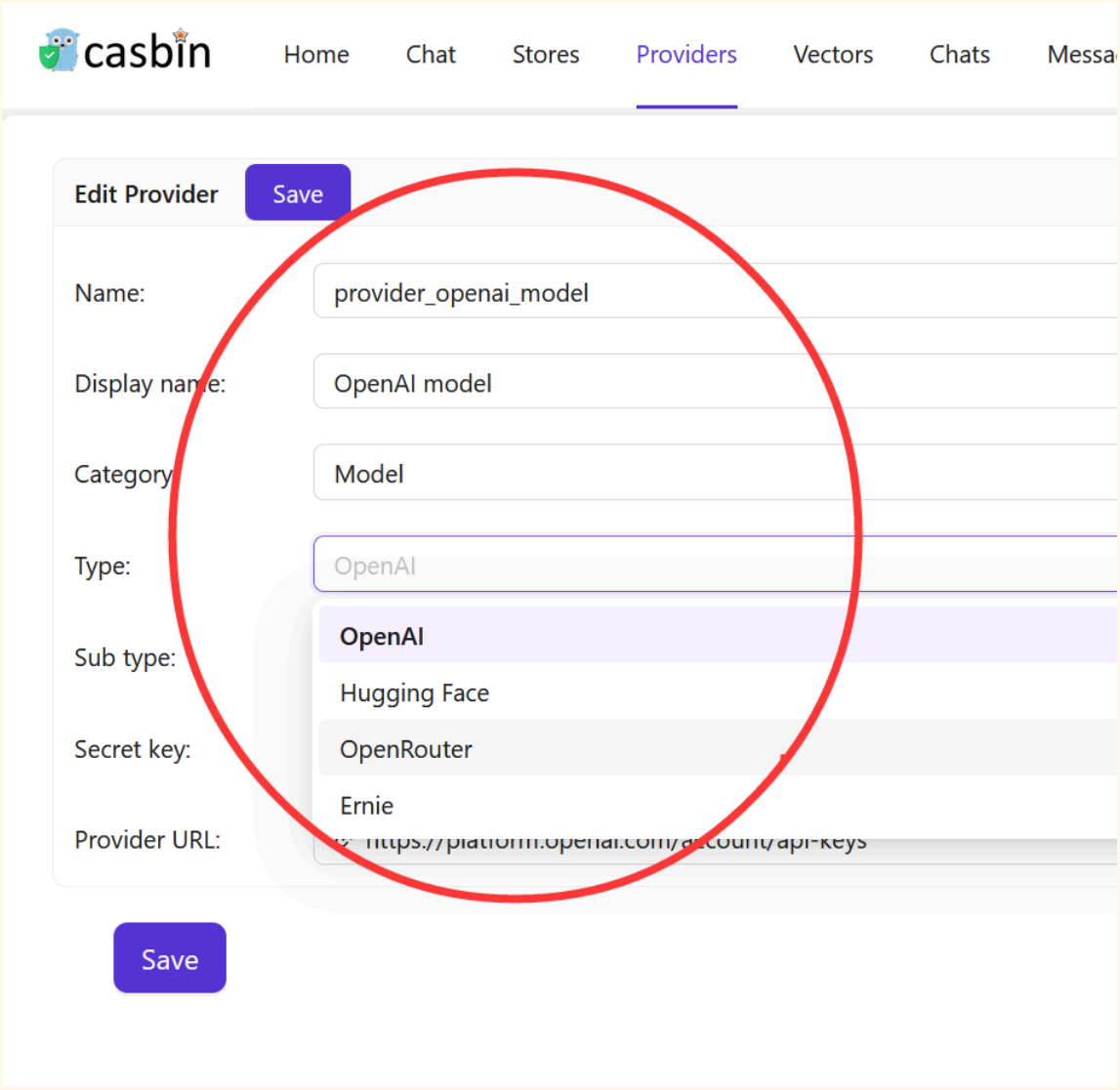
    - THUDM/chatglm2-6b
    - baichuan-inc/Baichuan2-13B-chat
    - gpt2
    - ……
- OpenRouter
    - anthropic/claude-2
    - palm-2-chat-bison
    - palm-2-codechat-bison
    - openai/gpt-4
    - ……
- OpenAI
    - text-davinci-003
    - gpt-3.5-turbo
    - gpt-4
    - ……

⚠ CAUTION

- Category: The first-level category of the model provider. For example, `Model` and `Embedding`.
- Type: The second-level category of the model provider. For example, `OpenAI` and `Hugging Face`.
- SecretKey: The secret key of your OpenAI account.

Example

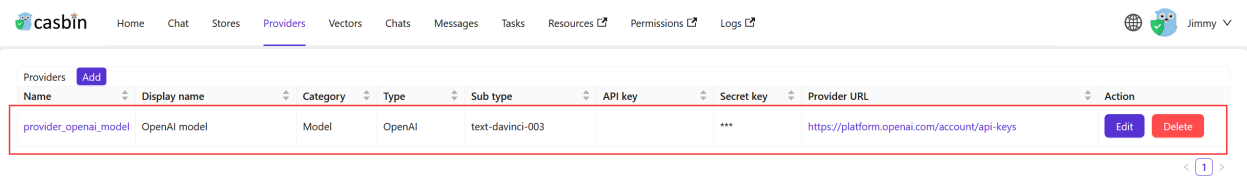
Add an OpenAI model provider



> ⚠ CAUTION
>
> Some models don't support **streaming-output**. Known models that support streaming-output include:
>
> - `gpt-3.5-turbo-0613`

After adding a model provider, you can use it to analyze and process data in Casibase using chatbots, question answering, and other AI capabilities.

Return to the model provider list page:



Now that you've added a model provider, you can use it to analyze and process data in Casibase using chatbots, question answering, and other AI capabilities.

Embedding Providers

Introduction

Embedding is a technique used to represent words and documents as vectors. Embedding providers allow you to analyze and process data within your knowledge base system, making it more intelligent and efficient.

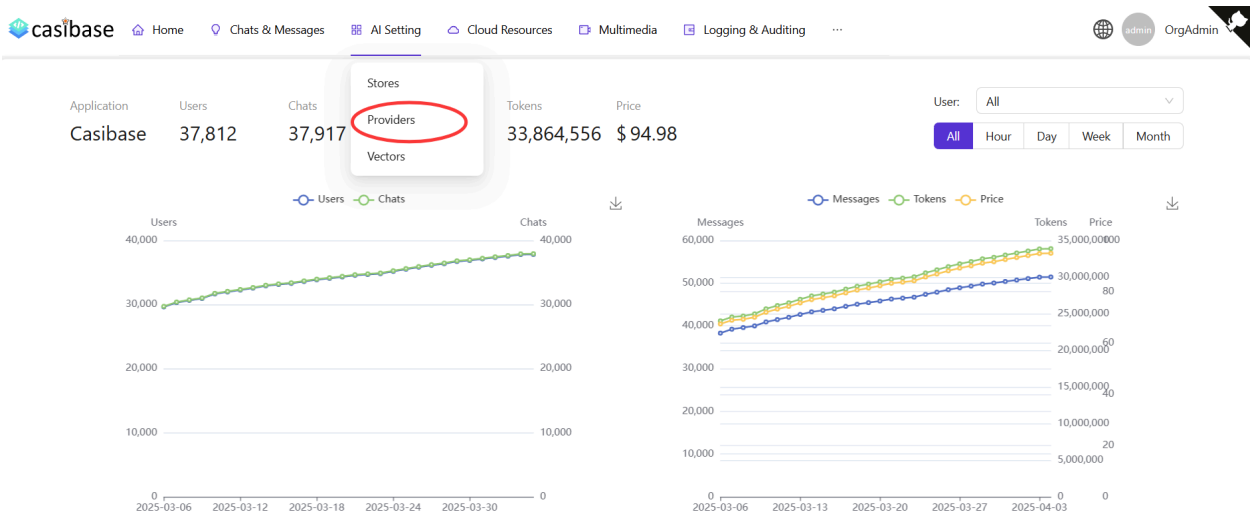
Refer to the Core Concepts section of our previous documentation for more information about embedding.

In Casibase, you can add an embedding provider by following these steps:

Add a New Embedding Provider

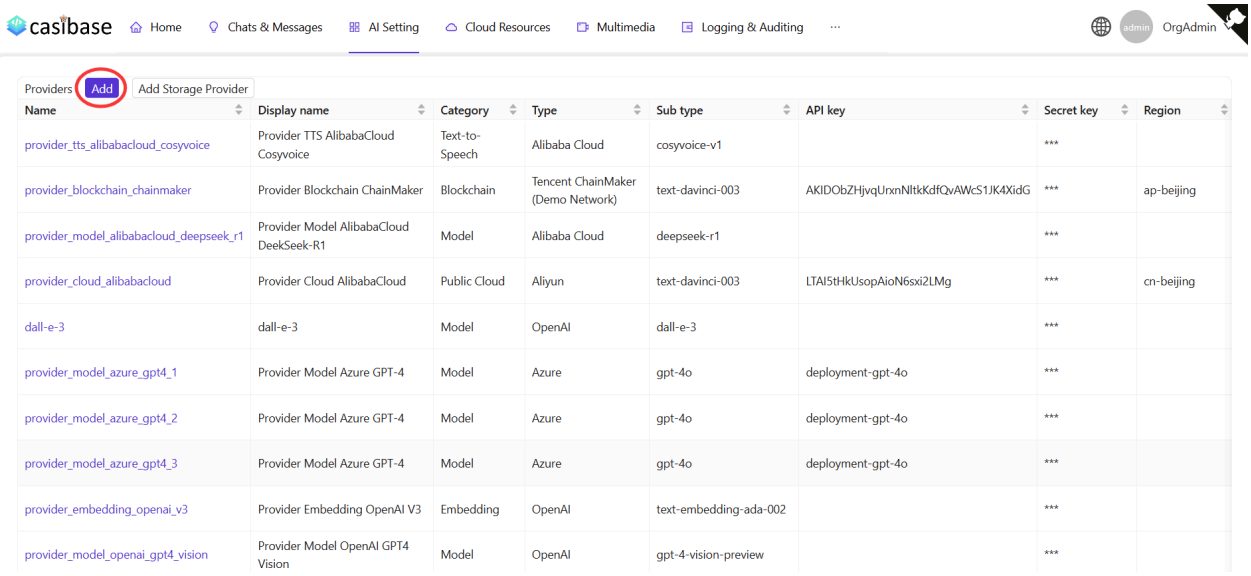
Embedding providers are used to integrate embedding into Casibase. You can add them by following these steps:

Click the `Providers` button on the page.



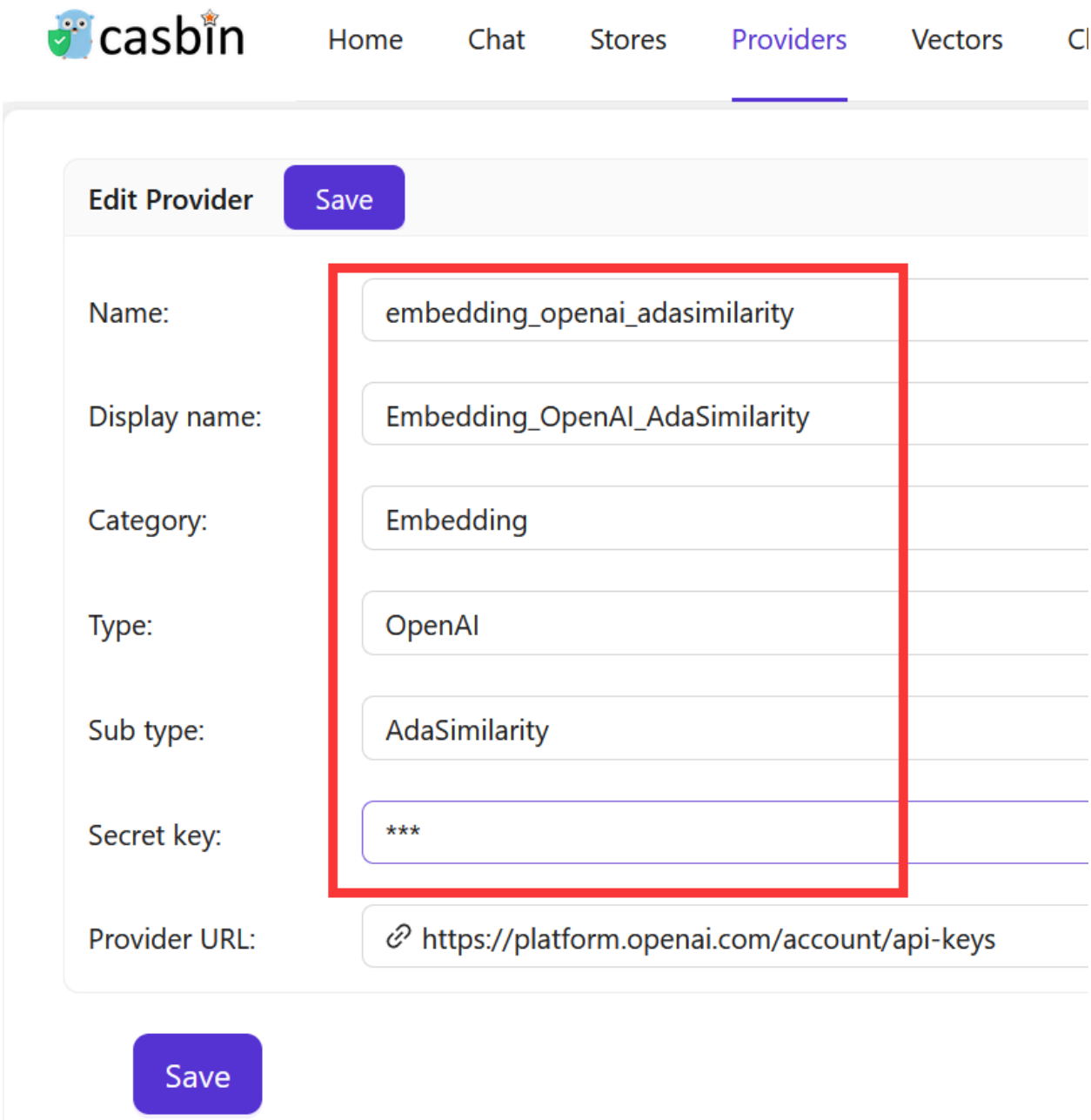
Add an Embedding Provider

Click the `Add` button to add an embedding provider.



Fill in Embedding Provider Details

Fill in the embedding provider details and click the `Save & Exit` button.



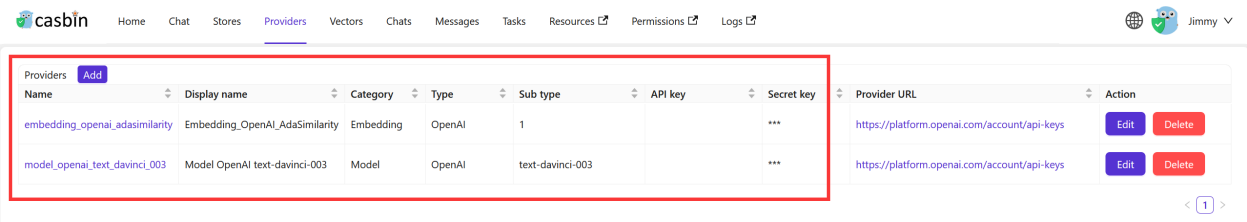
TIP

Casibase supports many embedding providers, including:

- OpenAI

    - AdaSimilarity
    - DavinciSimilarity
    - AdaEmbedding2
    - .....
- Hugging Face
    - sentence-transformers/paraphrase-MiniLM-L6-v2
    - .....

Return providers list page:



Now, you can use the embedding provider to convert text to vectors.

After adding an embedding provider, you can use it to retrieve similar documents in Casibase. For more information, please refer to the Core Concepts section of our previous documentation.

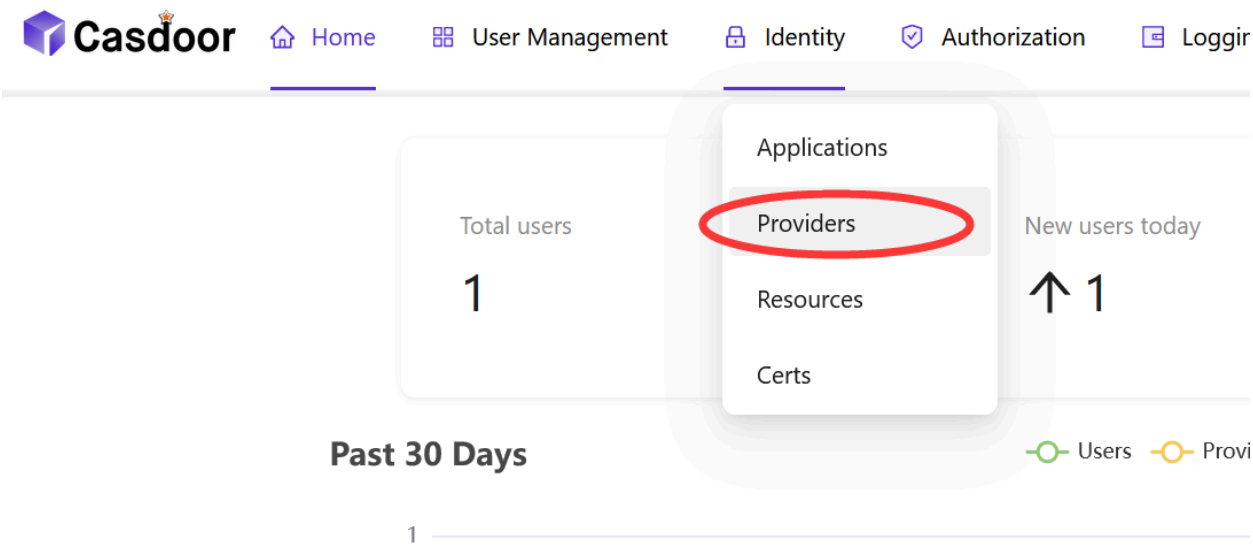
Storage Providers

Introduction

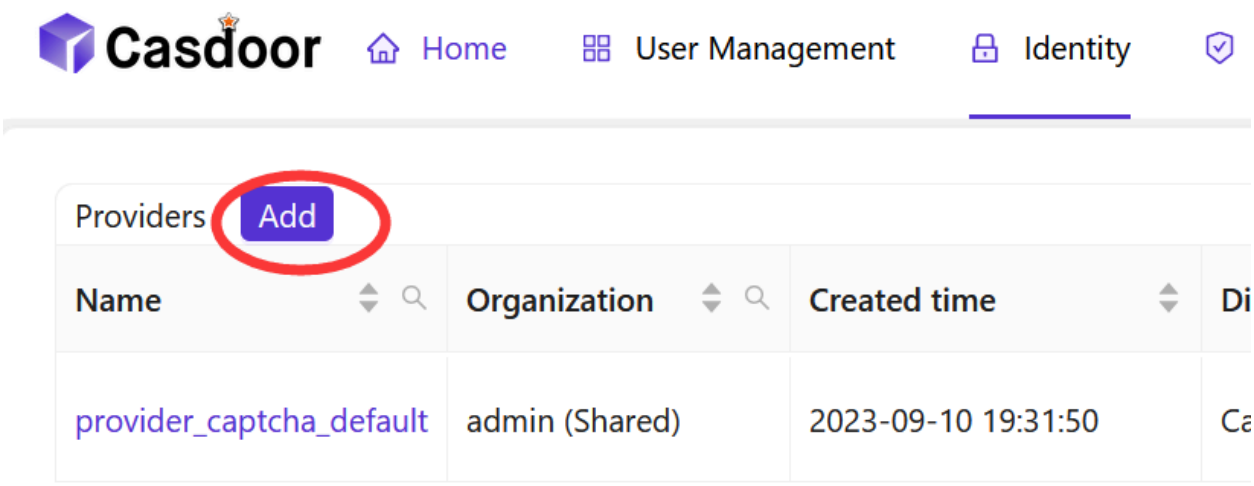
Adding a storage provider to Casibase enables you to efficiently manage and store data, making it an essential component for your knowledge base system.

Add a New Storage Provider

Storage providers are used to store data. They can be added in Casdoor by clicking the `Identity - Providers` button on the home page.

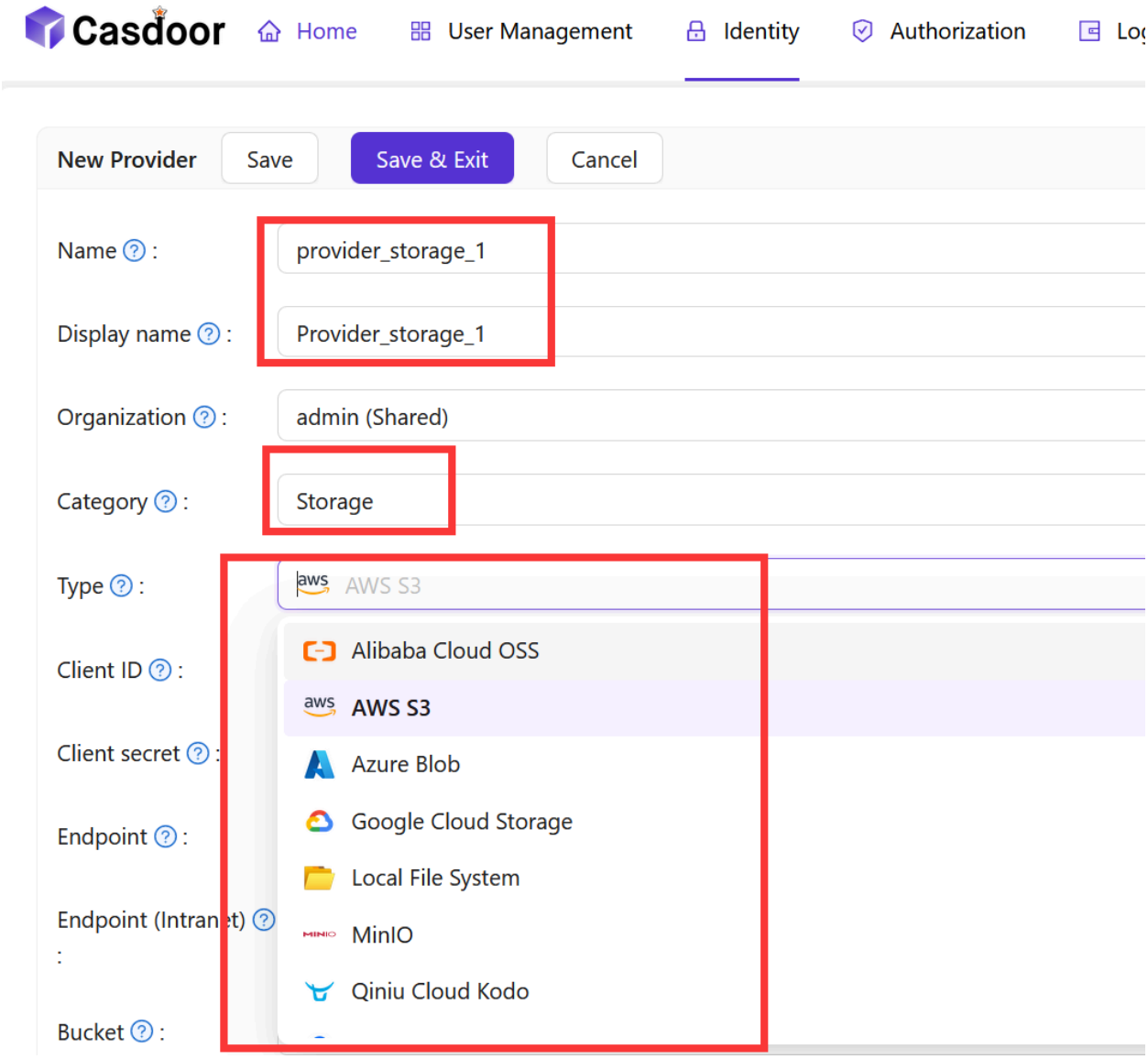


Click the `Add` button to add a storage provider.



Fill in the storage provider information

Fill in the storage provider information and click the `Save & Exit` button.



TIP

Casdoor supports many storage providers, including:

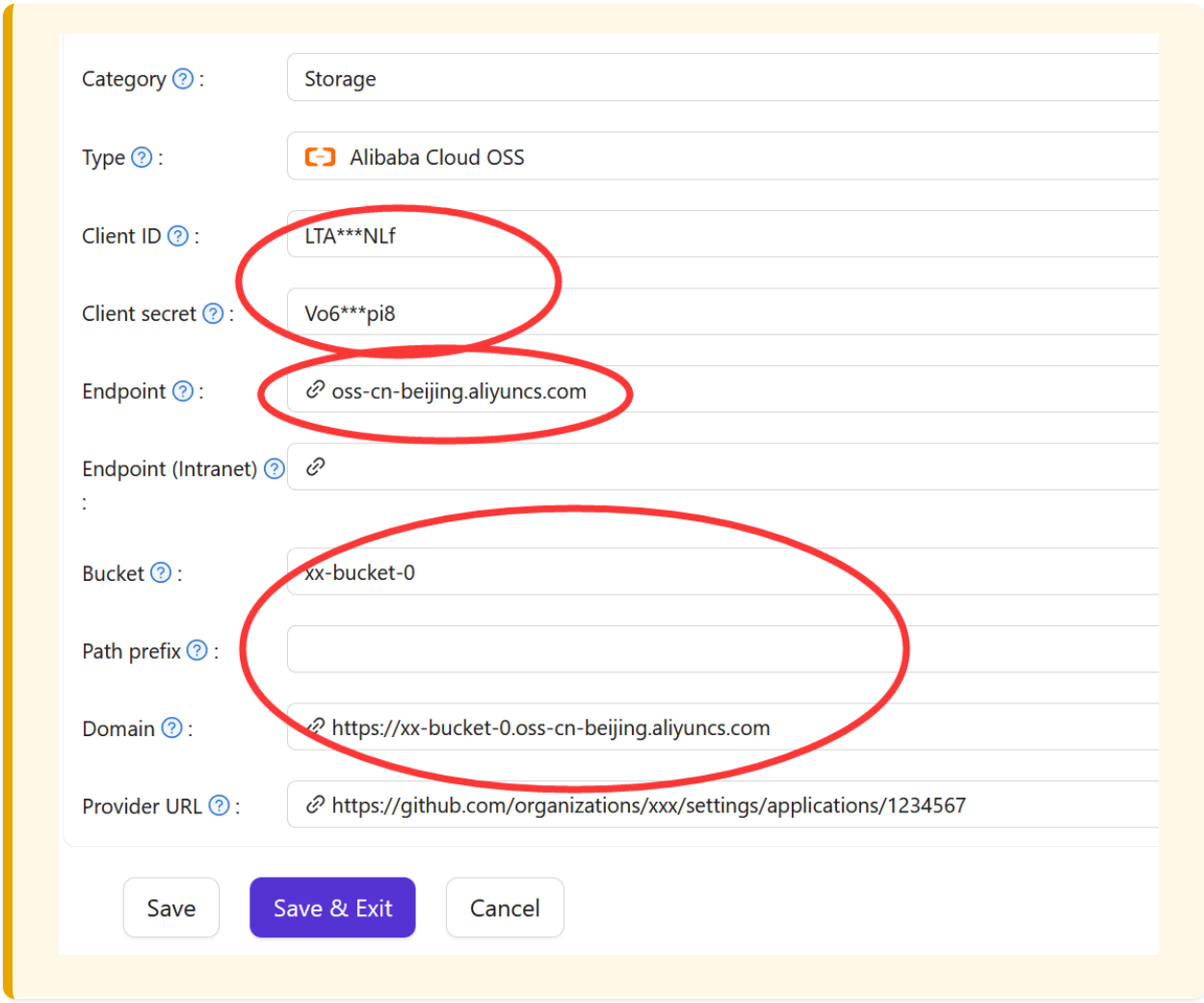
- AWS S3
- Azure Blob
- Google Cloud Storage
- MinIO

- Qiniu Cloud Kodo
- Alibaba Cloud OSS ...

Example

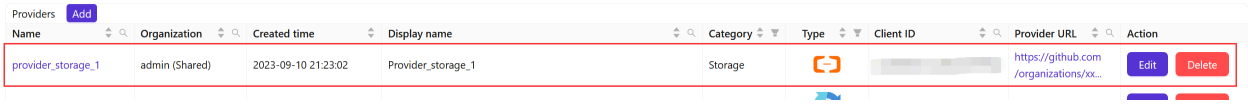
Add an Aliyun OSS storage provider

> ⚠ CAUTION
>
> - Client ID: The AccessKey ID of your Aliyun OSS account.
> - Client Secret: The AccessKey Secret of your Aliyun OSS account.
>
> `****` is the placeholder for your Aliyun OSS account information.



View the storage provider

After adding the storage provider, you can view the storage provider information.



Text-to-Speech Providers

Introduction

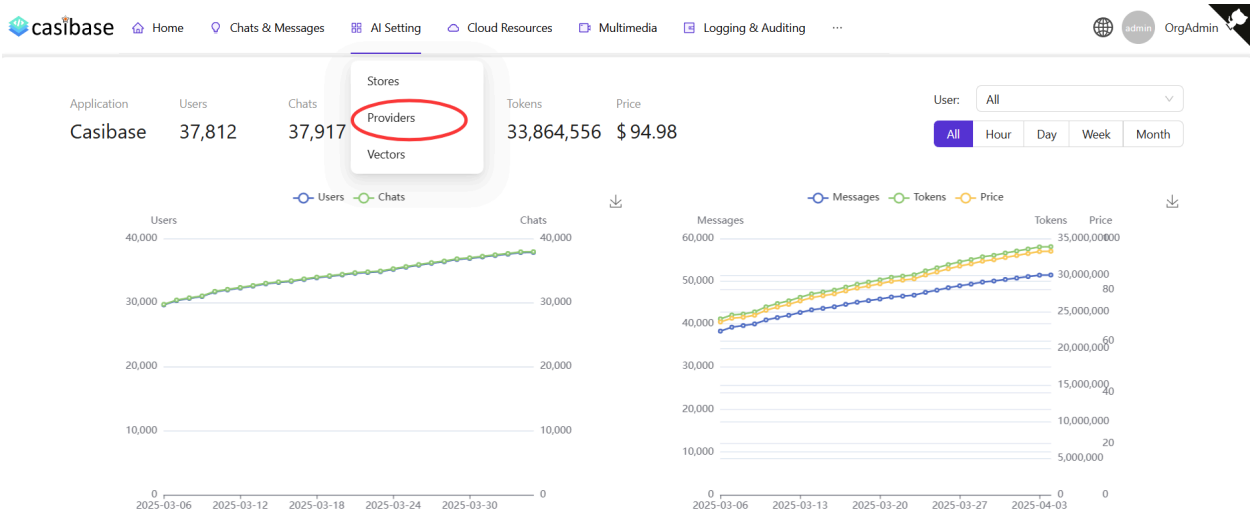
Text-to-Speech (TTS) is a technology that converts text into spoken voice output. TTS providers allow your Casibase applications to communicate with users through synthesized speech, enhancing the user experience and accessibility of your knowledge base system.

In Casibase, integrating a TTS provider enables your AI applications to verbally respond to queries, creating more interactive and engaging user experiences.

Add a New Text-to-Speech Provider

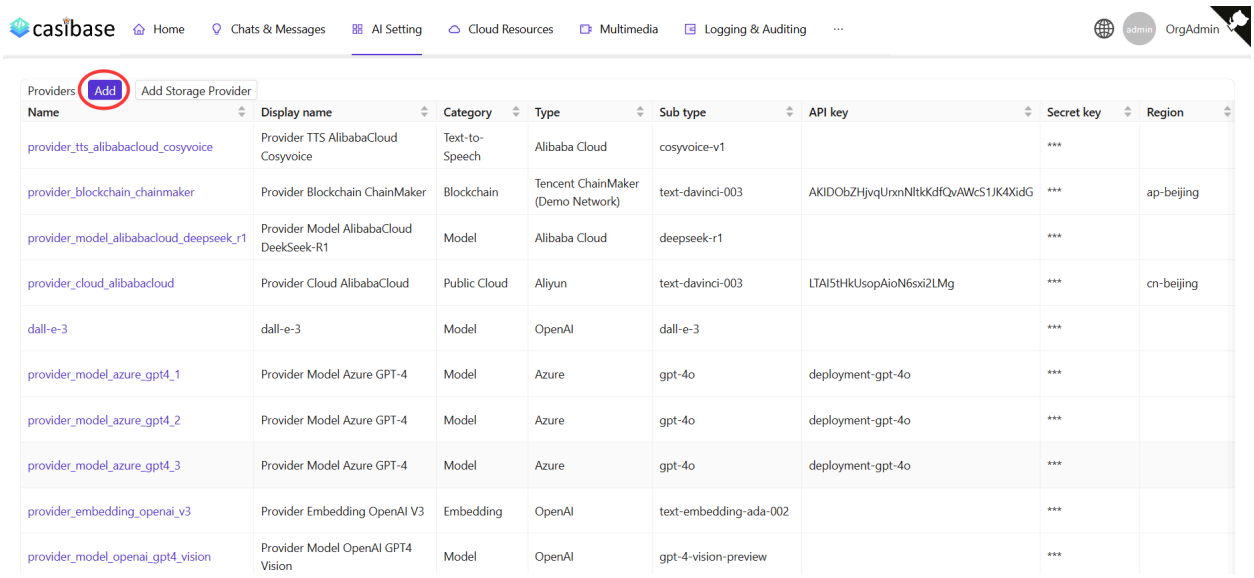
Text-to-Speech providers are used to integrate voice synthesis capabilities into Casibase. You can add them by following these steps:

Click the `Providers` button on the page.



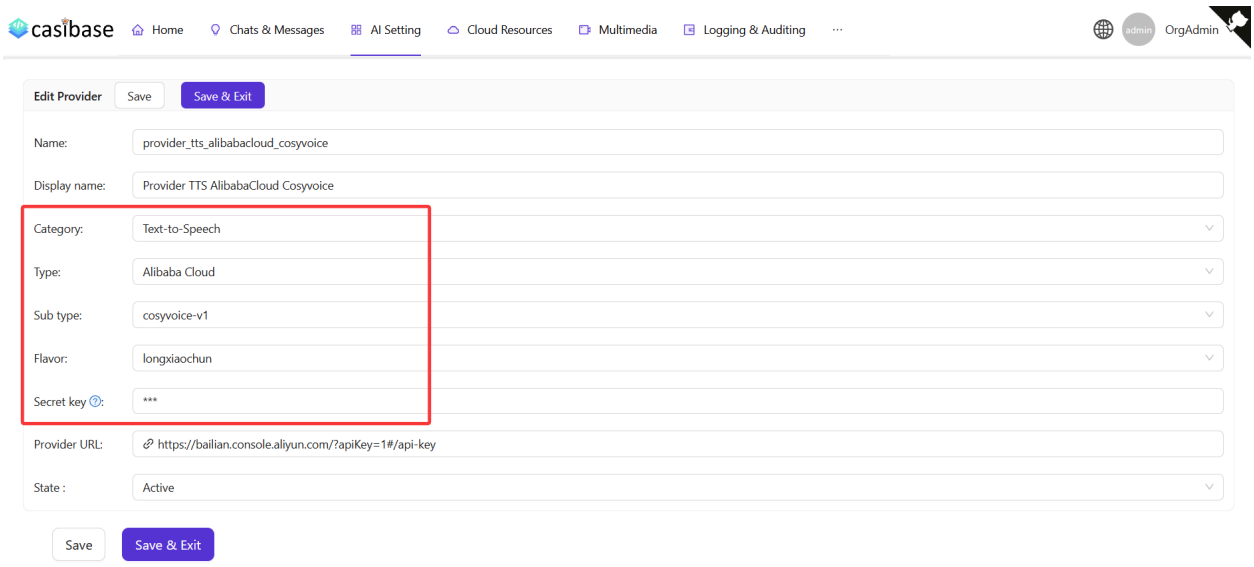
Add a Text-to-Speech Provider

Click the `Add` button to add a Text-to-Speech provider.



Fill in Text-to-Speech Provider Details

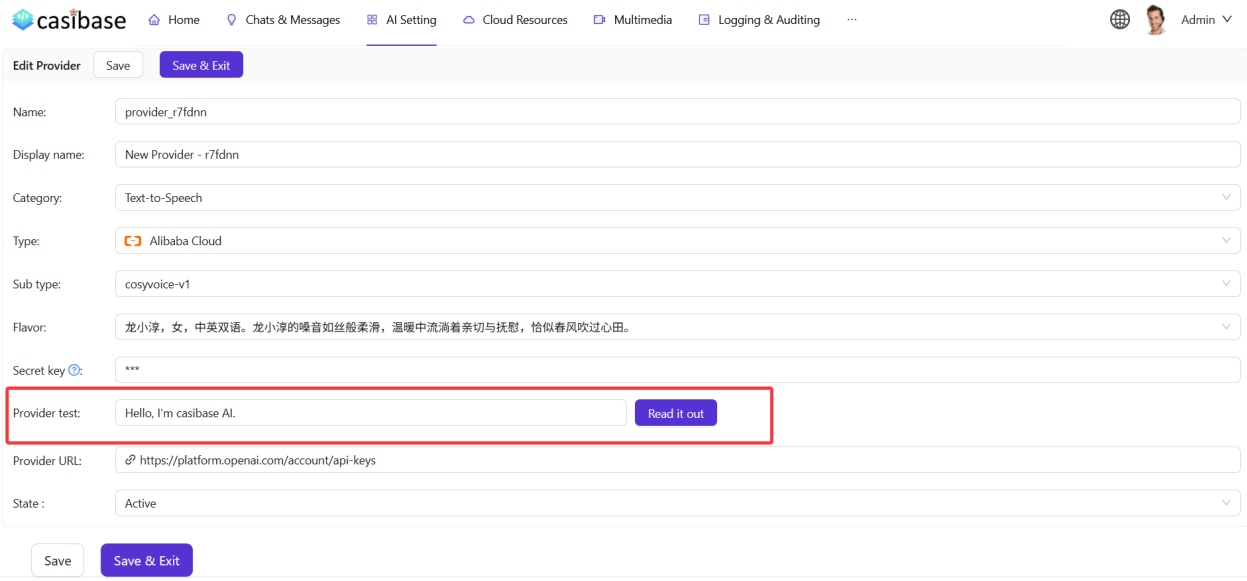
Fill in the embedding provider details and click the `Save & Exit` button.



> TIP
>
> Casibase currently supports the following Text-to-Speech provider:
>
> - Alibaba Cloud
>   - cosyvoice-v1 (with multiple voice options)

Testing Your Text-to-Speech Provider

You can test your TTS provider by clicking the `Read it out` button. This will allow you to enter text and hear the synthesized speech output.



This testing feature allows you to verify your TTS configuration before implementing it in your applications, ensuring the voice quality and settings meet your requirements.

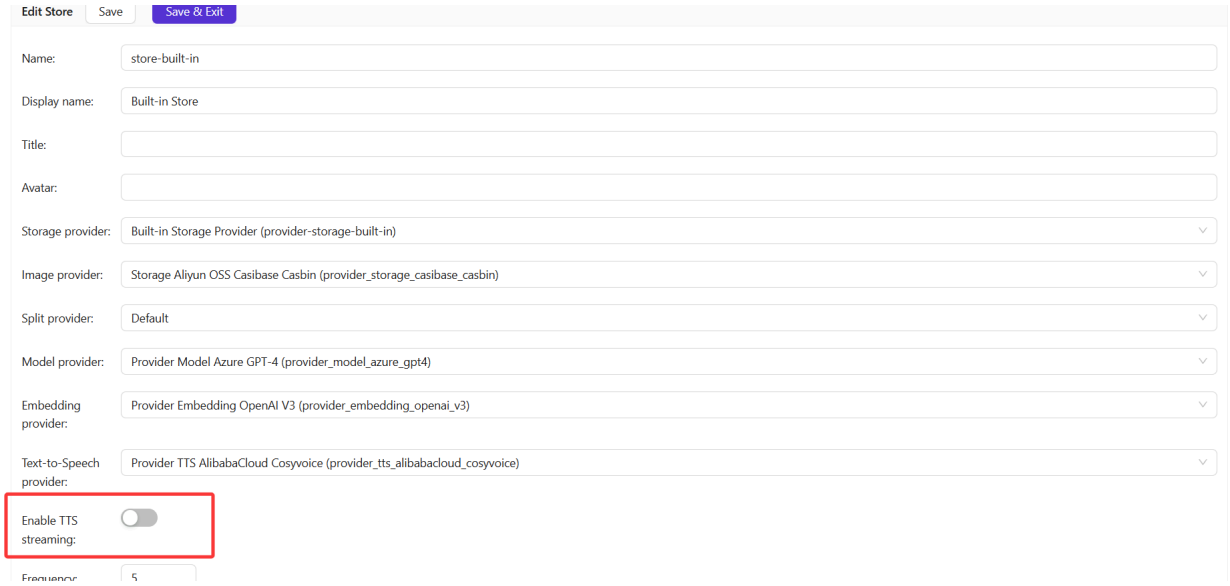
Voice Options for Alibaba Cloud

When using Alibaba Cloud's `cosyvoice-v1`, you can choose from various voice options:

- longwan
- longcheng
- ……

Using Text-to-Speech in Stores

After adding a Text-to-Speech provider, you can select this provider in your store settings and choose whether to enable TTS streaming.



Now, your store can convert text responses to speech, providing a more interactive experience for users.

Speech-to-Text Providers

Introduction

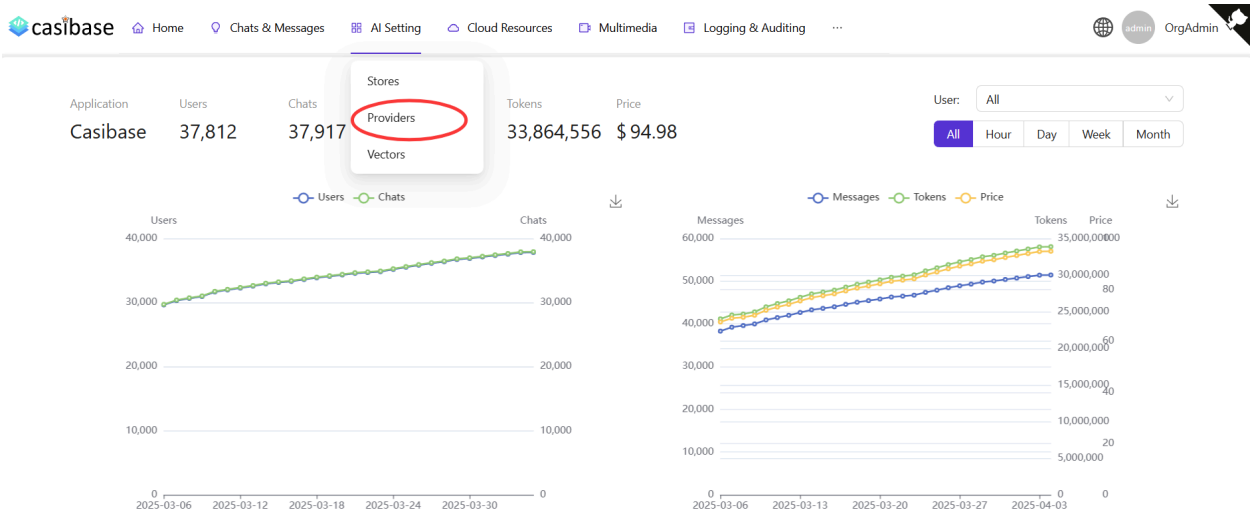
Speech-to-Text (STT) is a technology that converts spoken language into written text. STT providers allow your Casibase applications to understand and process spoken user input, enhancing the user experience and accessibility of your knowledge base system.

In Casibase, integrating an STT provider enables your AI applications to receive and process voice queries, creating more interactive and natural user interactions.

Add a New Speech-to-Text Provider

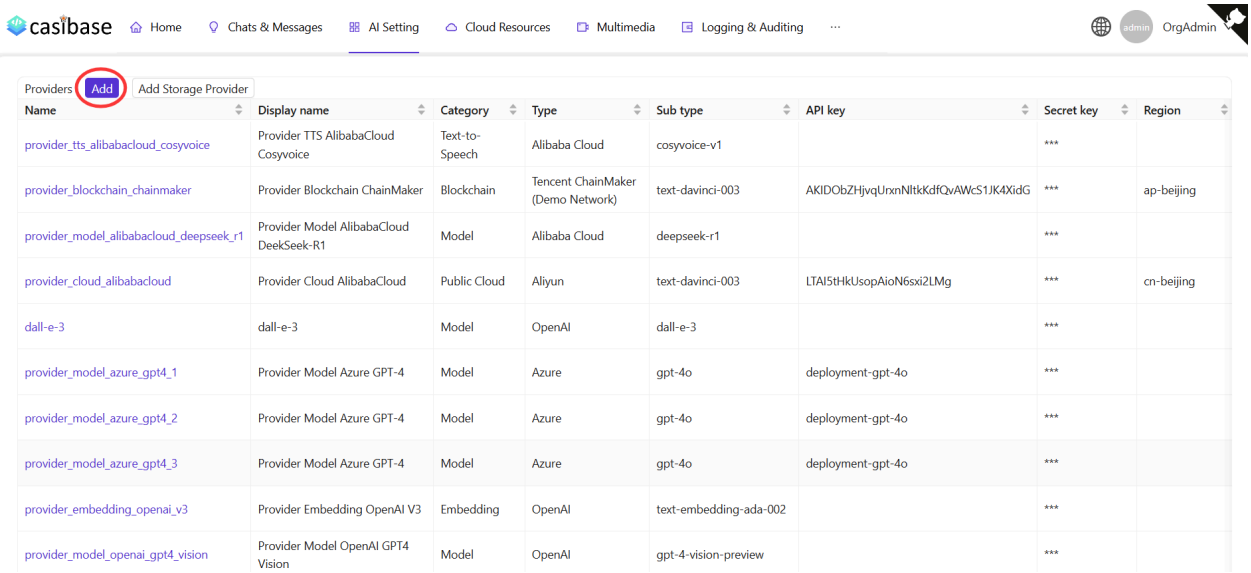
Speech-to-Text providers are used to integrate voice recognition capabilities into Casibase. You can add them by following these steps:

Click the `Providers` button on the page.



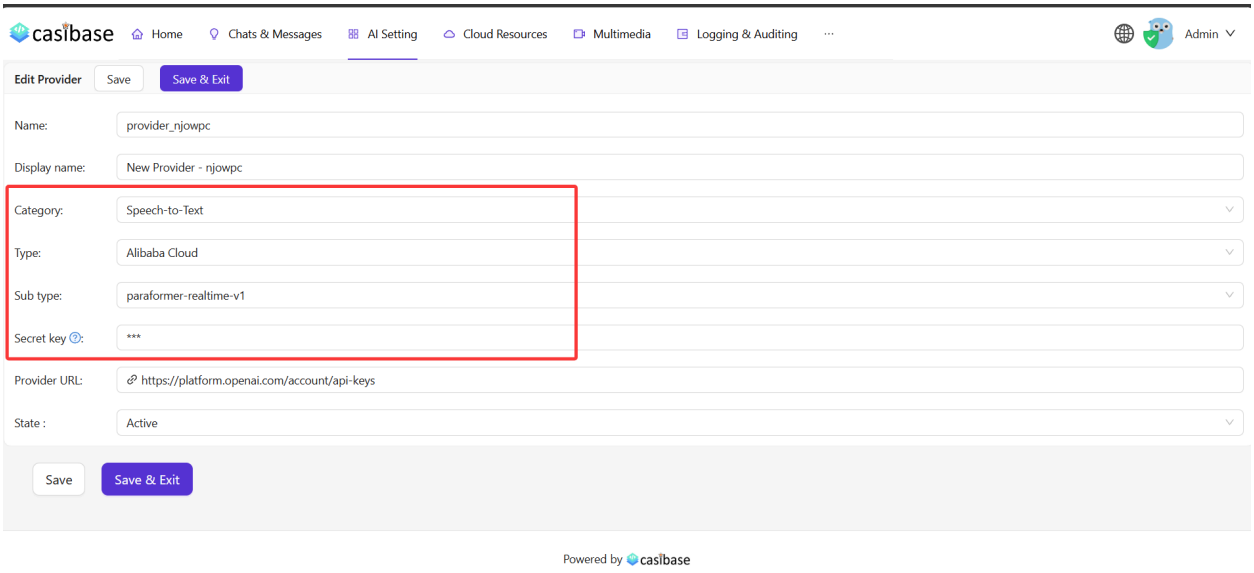
Add a Speech-to-Text Provider

Click the `Add` button to add a Speech-to-Text provider.



Fill in Speech-to-Text Provider Details

Fill in the speech-to-text provider details and click the `Save & Exit` button.

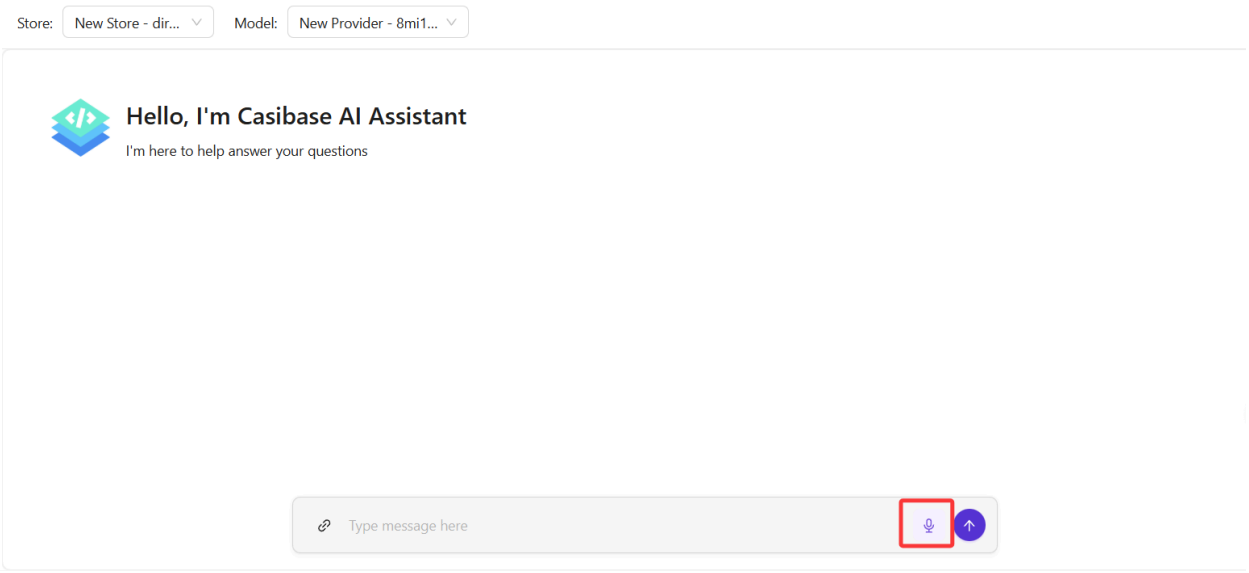


Using Voice Recognition

When you click the voice recognition button in your Casibase application, the following process occurs:

1. The browser will request permission to access your microphone
2. Once granted, the system will begin listening and automatically convert your speech to text
3. After you finish speaking, the recognized text will be automatically sent as a message

This feature enables hands-free interaction with your Casibase applications, making them more accessible and convenient to use.



> TIP
>
> Casibase currently supports the following Speech-to-Text provider:
>
> - Alibaba Cloud
>   - paraformer-realtime-v1

Stores

📄 Overview

Stores Overview

📄 Store Configuration

After adding storage providers, model providers and embedding providers, we can configure the stores

Overview

1. Overview of the Stores Function

In Casibase, the Stores function is one of its core modules, which allows users to integrate storage, modelling, and embedding service providers for knowledge base data storage, text vector conversion, and interaction with chatbots. With the Stores feature, users can build an efficient, flexible and powerful AI knowledge management system.

2.Advantages of Stores

2.1 Multi-model integration

Casibase's Stores feature supports multiple mainstream AI language models, including OpenAI (e.g., GPT-3.5, GPT-4), Azure OpenAI, HuggingFace, Google Gemini, and so on. This multi-model support allows users to choose the most suitable AI model for their specific needs and find a balance between performance, cost and features.

2.2 Multiple storage and embedding options

Users are free to choose storage and embedding service providers to meet different data storage and processing needs. This flexibility enables users to configure the most appropriate storage and embedding solution based on their technology stack and business requirements.

2.3 Multi-Store Mode

Casibase supports a multi-Store model that allows users to use different models, storage and embedding services in different Stores to provide customised services for different scenarios and users. This feature enables users to flexibly configure and switch Stores according to different business requirements.

3.Summary

Casibase's Stores feature provides users with a powerful knowledge management tool that enables them to flexibly build and manage knowledge bases by integrating multiple AI models, stores and embedded services. Its multi-Store model and enterprise-level features further enhance the flexibility and security of the system, which is suitable for a variety of application scenarios.

Casibase is an open source AI knowledge base system designed to provide efficient and flexible knowledge management and dialogue solutions for enterprises. One of its core features is Providers, which allows users to integrate multiple AI models and storage services to enhance the functionality and performance of the system.Providers are divided into three main categories: Model Providers, Embedding Provides and Storage Providers, which are responsible for handling AI models and data storage, respectively.

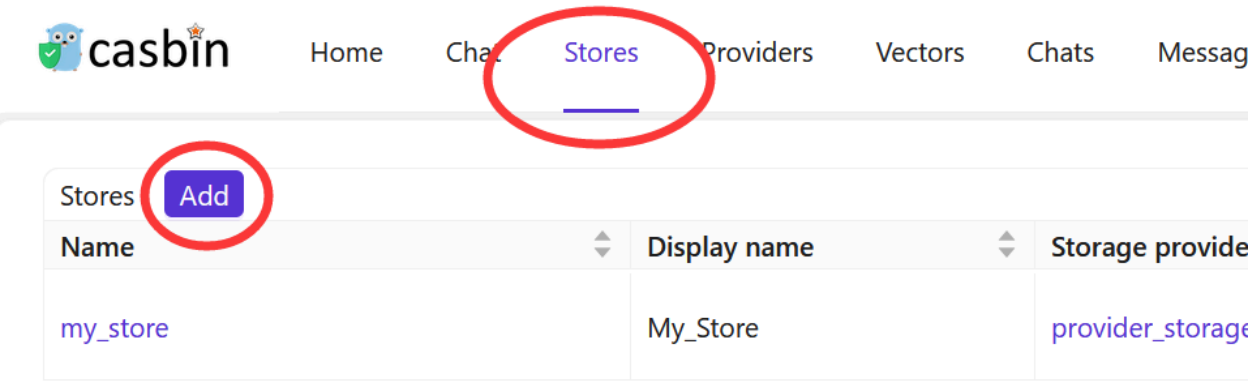
Store Configuration

After adding storage providers, model providers and embedding providers, we can configure the stores

1.Add a New Store

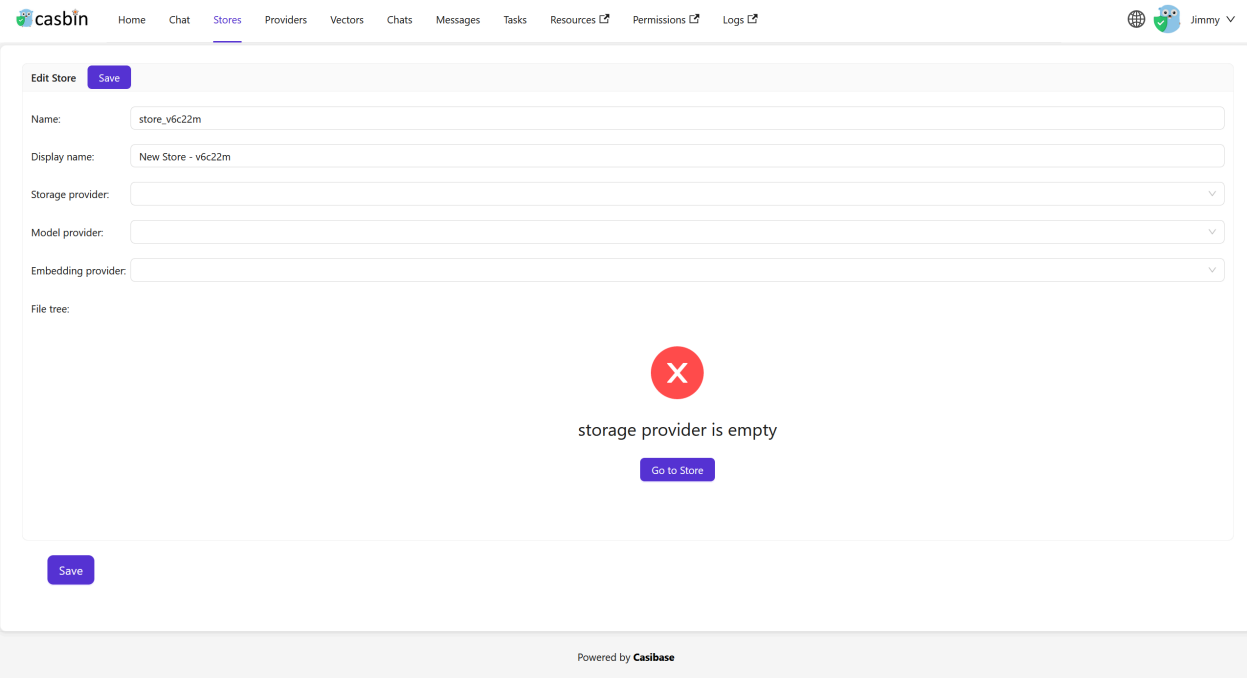
Stores are used to integrate storage, model, and embedding providers into Casibase. You can add them by following these steps:

Click the `Stores` button on the home page and then click the `Add` button to add a store.

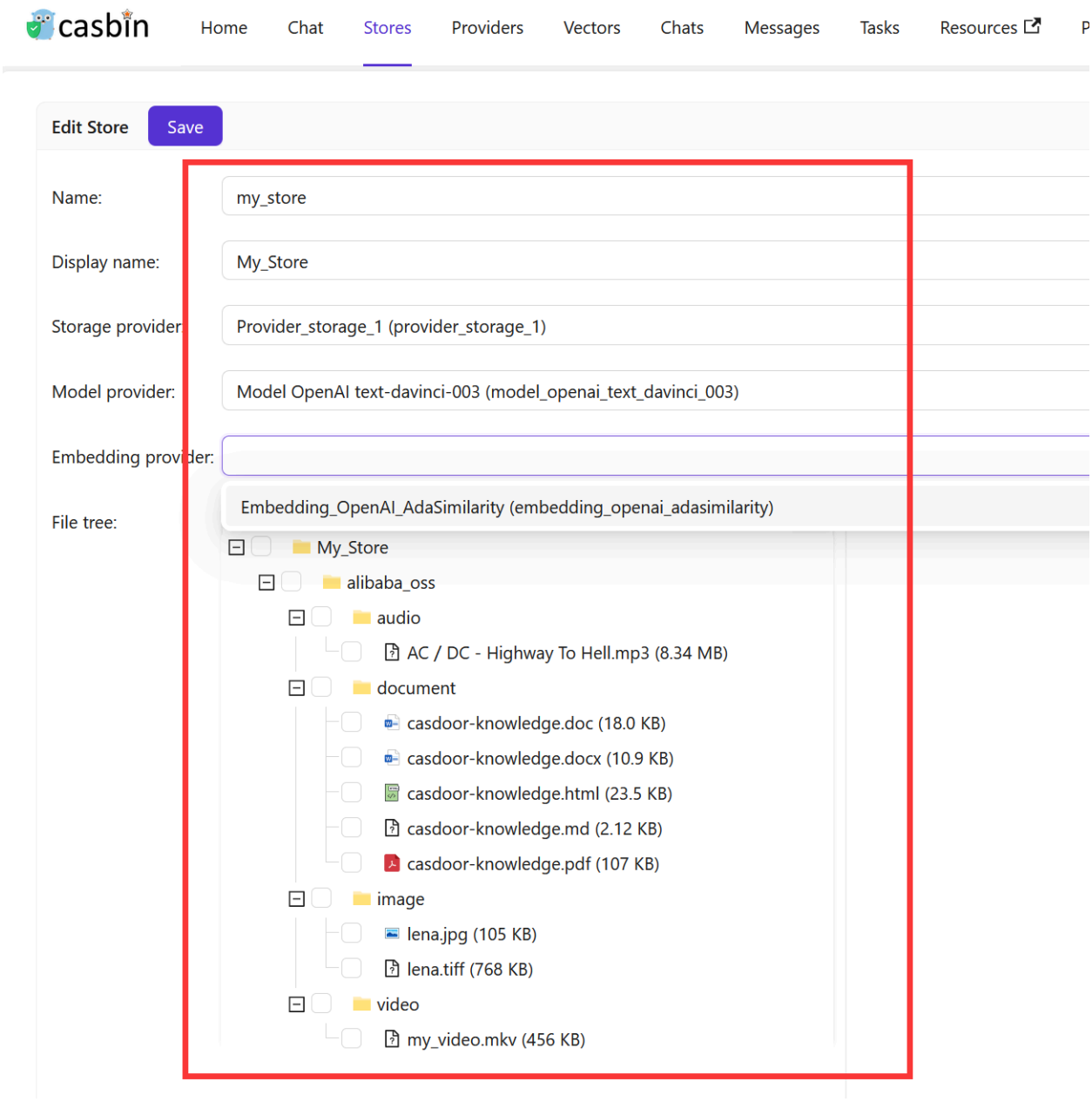


Fill in Store Details

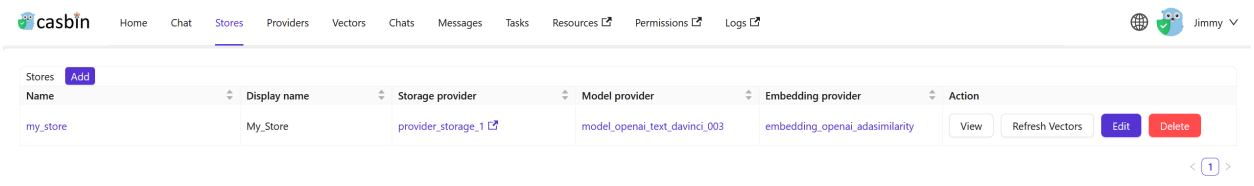
Fill in the store details and click the `Save & Exit` button.



Select the storage provider, model provider, embedding provider, text-to-speech provider and speech-to-text provider you added before.



Click the `Save & Exit` button and return to the stores list page:



Now, you can use the store to store knowledge base data, convert text to vectors, and chat with the chatbot.

In the next section, we will learn how to chat with the chatbot in Casibase.

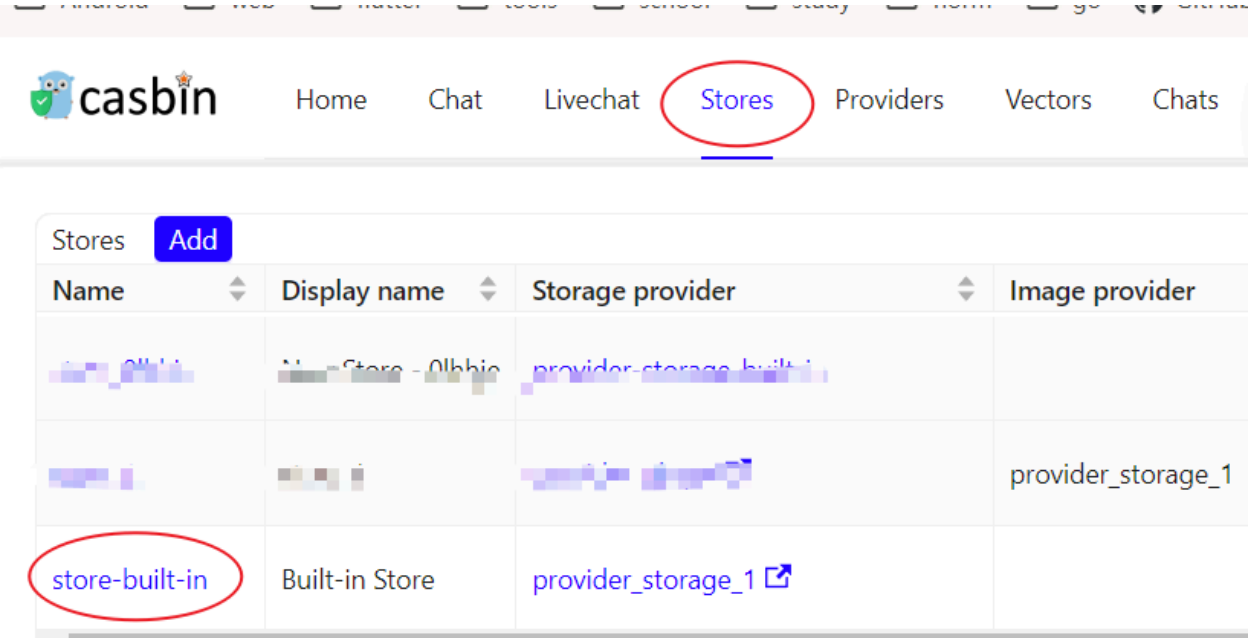
2.Support Multi-store

The multi-store mode provides users with different models, suggestions, and more within each distinct store.

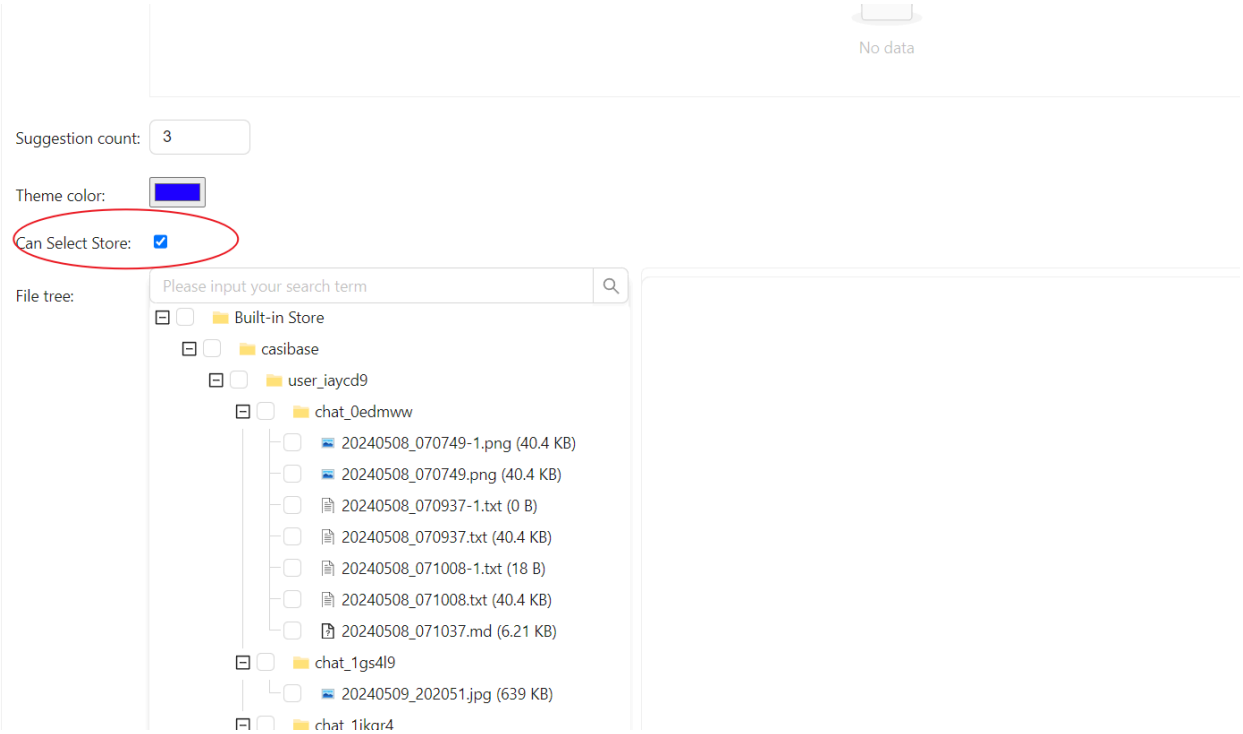
Enable Multi-store

First, you should enable multi-store mode in the built-in store.

Click the `Stores` button on the home page and then click the `store-built-in` button to enter the store-built-in store.



Scroll down and find the `Can Select Store` field, tick it.

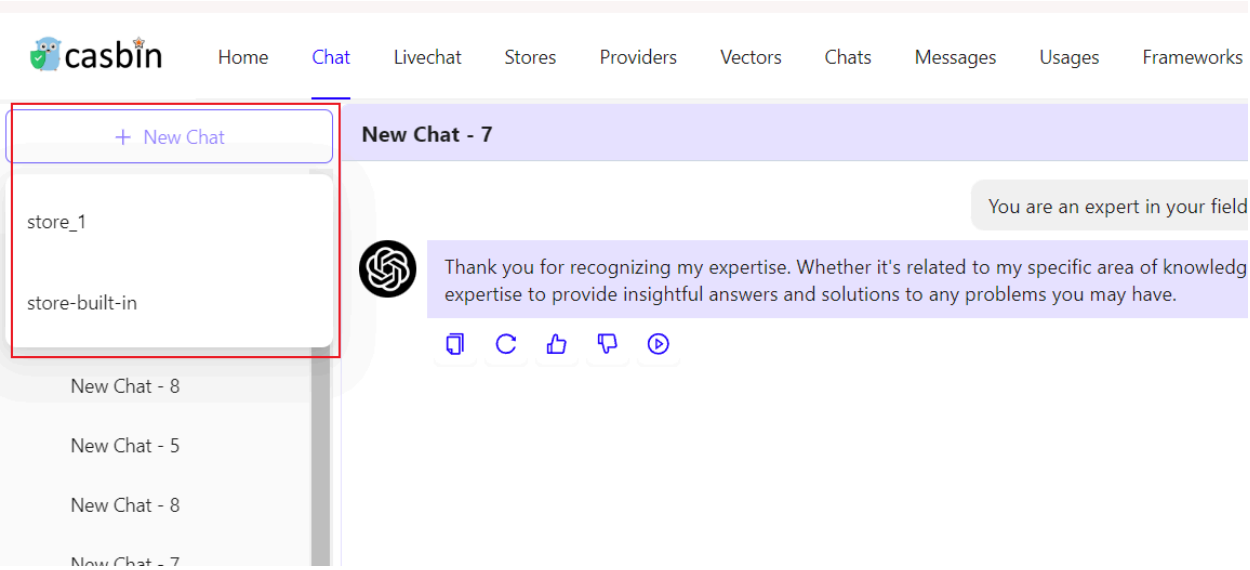


Add Usable Stores

The multi-store mode only provides usable stores. To make a store usable, you need to configure its storage provider, model provider, and embedding provider.

Select For Conversation

Casibase provides a very convenient method for selecting a store.



Just hover your mouse over "New Chat" and then you can select the Store you wish to use from the list that appears below.

If you click the "New Chat" button, the system will assign you a default Store.

Vectors

📄 Overview

Vectors Overview

📄 Vectors Generation

The generation of vectors needs to be used in conjunction with stores, which means that you need to configure stores before you can understand vectors.

Overview

In Casibase, vectors are one of its core strengths. Vector technology plays a key role in knowledge representation and retrieval, and by pairing it with the stores feature, which converts data such as text and images into dense vectors, Casibase enables efficient similarity search and data analysis.

For information on the definition of vectors, see the core-concepts section in our previous documentation.

Application of vector technology in Casibase

Knowledge Embedding

Users can upload files in various formats (e.g. TXT, Markdown, Docx, PDF, etc.) and select embedding methods (e.g. Word2Vec, GloVe, BERT, etc.) to generate knowledge and corresponding vectors. These vectors are stored in a vector database for quick retrieval and query.

Similarity Search

Casibase converts the knowledge into vectors and stores them in a vector database. This vector representation supports a powerful similarity search function, which allows users to quickly find relevant information based on context or content.

Vectors Generation

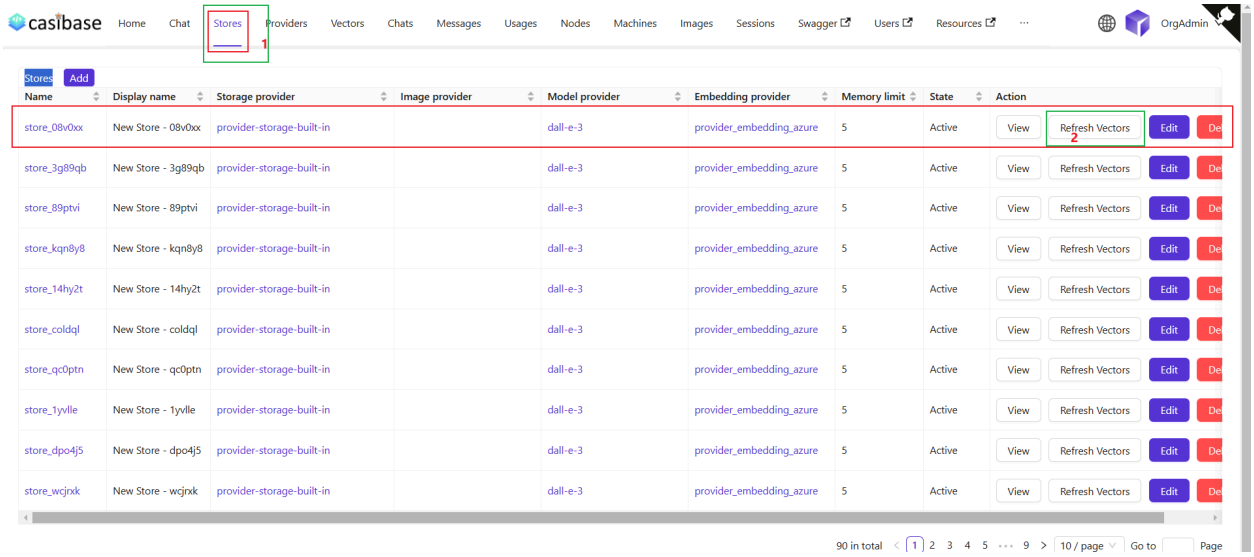
The generation of vectors needs to be used in conjunction with stores, which means that you need to configure stores before you can understand vectors.

Vectors are actually the result of embedding, which is the process of converting various types of data, such as text and images, into dense vector representations. This step is essential to facilitate efficient data processing and analysis within Casibase. With embedding, questions in chat and knowledge files in storage will be converted into vectors that will be used in the next step of knowledge search.

1. Refresh Vectors

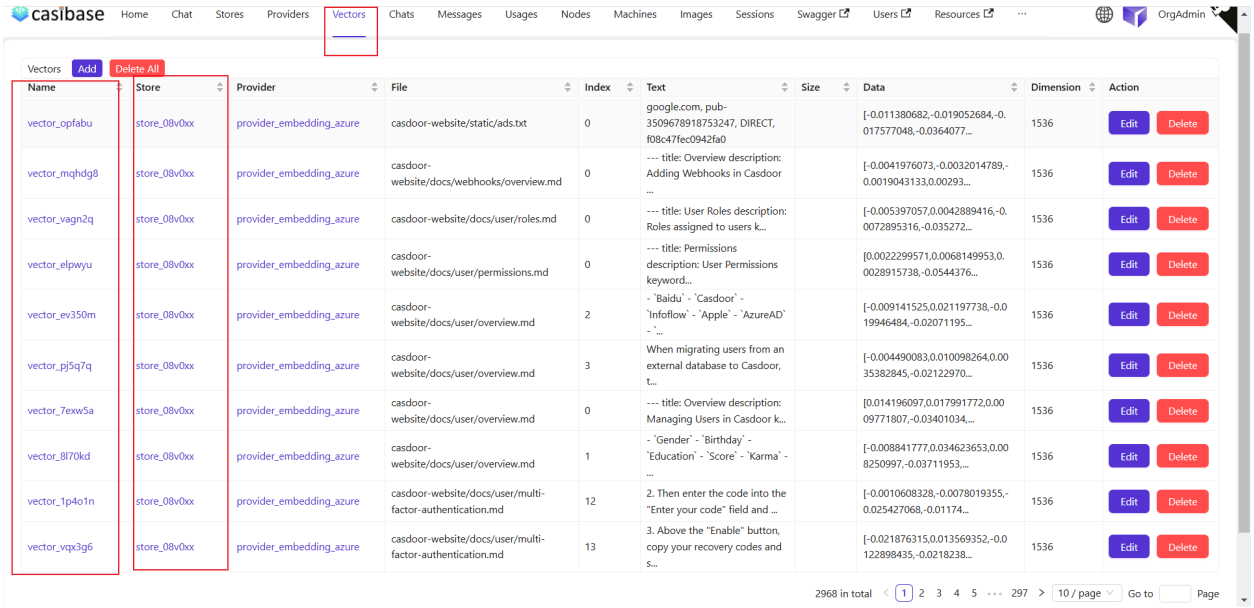
The Refresh Vectors action is set as a button on each store data under the stores menu. In stores, since we will be setting up storage providers, it will provide us with a file tree for storing user files, so after configuring stores, save the configuration and return to the home page and you will see the file tree for the storage providers.

By clicking on the Refresh Vectors button for a particular stores, it will generate the corresponding vectors for all the files in the file tree for that stores by embedding them. The following figure shows the page and the operation.

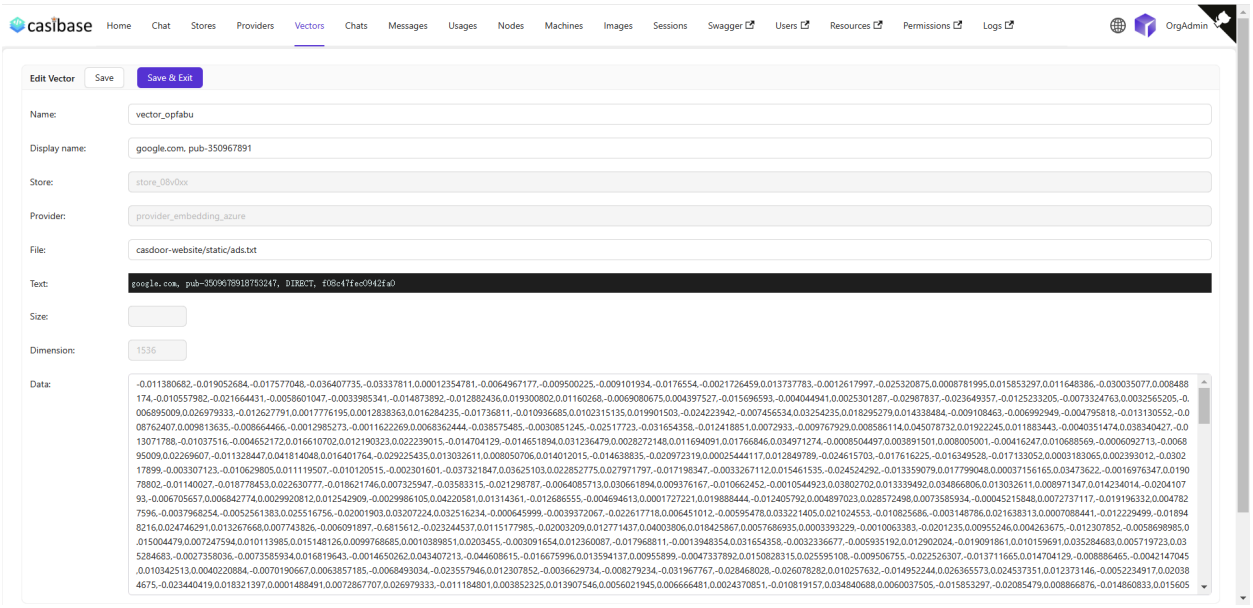


2. View vectors

After that, we can view the specific vectors generated by that storages in the vector menu.



We can see that the files in the stores from the previous step of refreshing vectors have been converted into vectors to display here.



The edit page of my vectors shows specific information such as the name of the store, the name of the embedding model, the name of the file in which the embedding was performed, the file size, the dimension, the vectors data, and so on.

TextSplitters

📄 Overview

Text Splitters Overview

Overview

Text Splitters are a crucial component in building large language model (LLM) applications. Their primary role is to break long texts into multiple shorter segments, which facilitates subsequent tasks such as text embeddings, retrieval-augmented generation (RAG), and question-answering systems.

In LLMs, text splitting is performed for several main reasons:

- Optimizing Efficiency and Accuracy: By decomposing large blocks of text into smaller segments, the relevance and accuracy of the embeddings produced by the LLM can be optimized. Chunking helps ensure that the embedded content contains minimal noise while retaining semantic relevance. For instance, in semantic search, when indexing a document corpus, each document contains valuable information on specific topics. Applying an effective chunking strategy ensures that search results accurately capture the essence of a user's query.
- Limiting the Context Window Size: When using models like GPT-4, there is a limit to the number of tokens that can be processed. For example, GPT-4 has a context window size limit of 32K tokens. While this limit is generally not an issue, it is important to consider chunk size from the beginning. If the text chunks are too large, information might be lost or not all content may be embedded in the context, which can affect the model’s performance and output.
- Handling Long Documents: While embedding vectors for long documents can capture the overall context, they might overlook important details pertaining to specific topics, leading to outputs that are either imprecise or incomplete. Chunking enables better control over the extraction and embedding of information, thereby reducing the risk of information loss.

Casibase currently offers multiple splitting methods, allowing users to apply

different processing strategies for various text scenarios.

Default Text Splitter

The default text splitter is designed to efficiently segment text based on token count and textual structure. Its splitting strategy includes:

- Line Reading and Paragraph Recognition: The text is read line by line, with consecutive blank lines used to accurately determine paragraph breaks. It also sensitively identifies natural breakpoints through markers, ensuring logical and precise text segmentation.
- Special Handling for Code Blocks: Code blocks enclosed by ``` symbols are treated separately. The number of lines within a code block determines whether it can stand alone as a segment. This mechanism preserves the integrity of code blocks while effectively preventing any single text segment from exceeding the token limit.
- Maintaining Sentence Integrity: Throughout the splitting process, strict adherence to sentence integrity is maintained, ensuring that sentences are never divided. This feature guarantees that each text segment contains a complete unit of information. Regardless of the complexity of the text, segmentation is accurately performed at sentence boundaries, effectively avoiding ambiguity and information loss due to broken sentences.

Q&A Splitter

The Q&A splitter focuses on the precise segmentation of question-and-answer formatted texts and offers the following core advantages:

- Accurate Splitting of Q&A Units: It uses a line-by-line scanning mechanism to intelligently identify the structure of Q&A texts. By determining whether each line begins with “Q:” or “A:”, it precisely locates the boundaries between

questions and answers, ensuring that each Q&A pair is completely segmented. This guarantees the independence and completeness of each Q&A unit, providing clean data for subsequent Q&A processing and analysis.

- Clear and Logical Implementation: The code is simple and intuitive, making it easy to understand and maintain. By managing the state of the current Q&A pair and a flag indicating whether an answer is being collected, the process of text segmentation is clearly controlled, ensuring the correct pairing of each Q&A unit.

Chats

📄 Overview

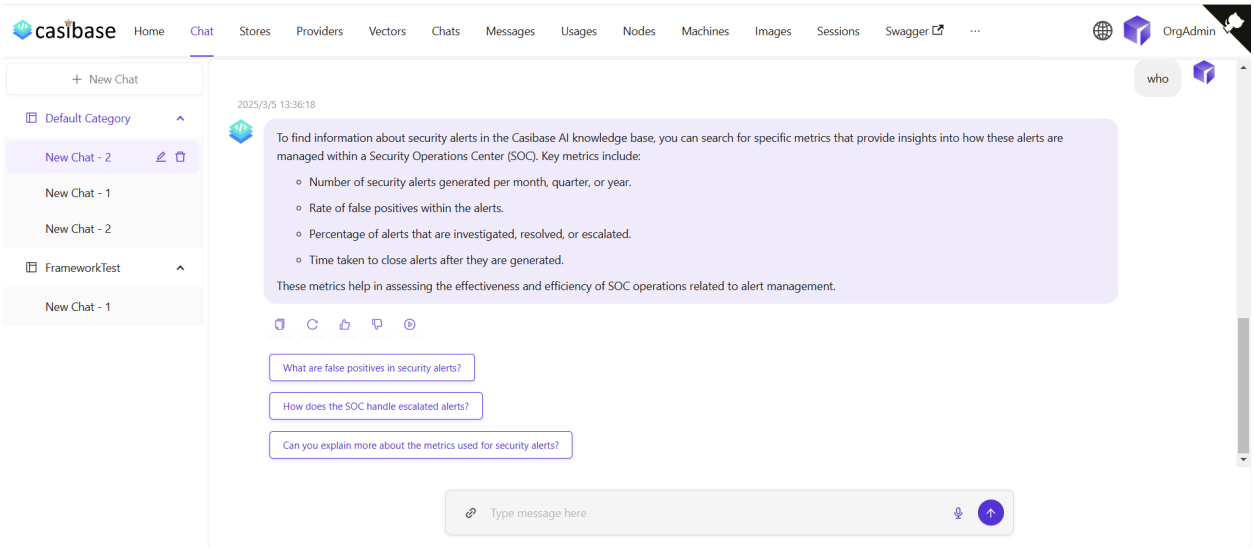
Chats Overview

Overview

In this section, we introduce the most central part of Casibase: chat and its management.

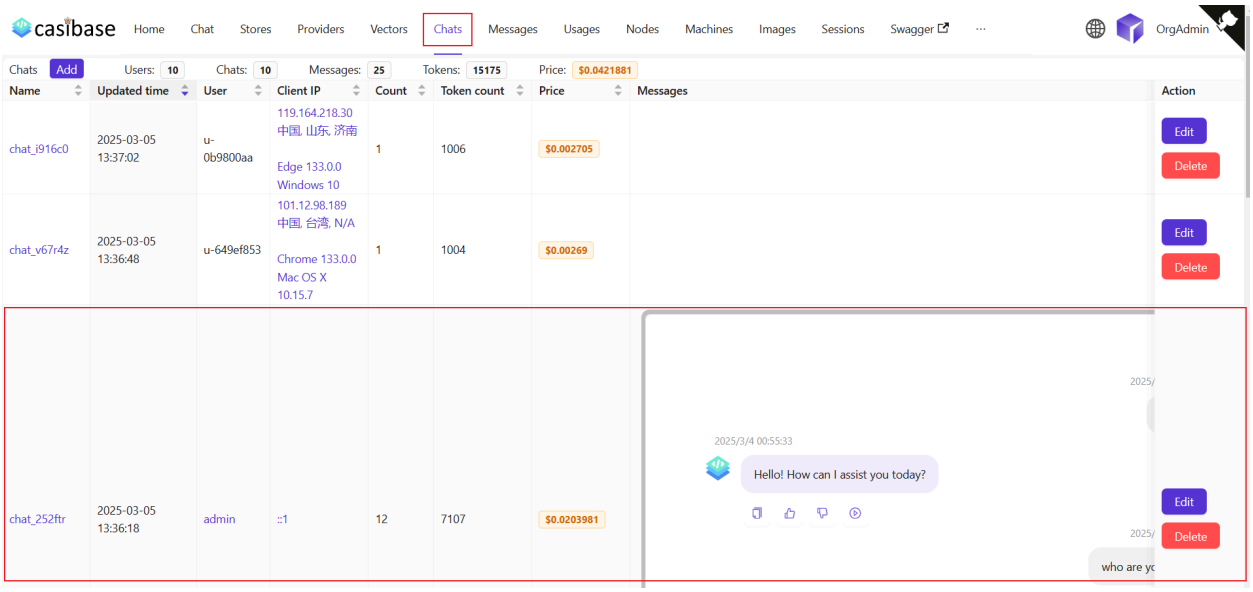
1. Chat

Once we have configured the store, we can have a dialogue with the AI. This is shown in the image below:



2. Chats (Chat management)

We can manage our chat sessions from the Chats menu.



This page allows the user to view the information of the created chats, and the user can also click on Edit to view or edit them. They display the following information:

- `Name`: The name of the created chat.
- `Updated time`: The time when the chat is Updated.
- `User`: The user to whom the chat belongs.
- `Client IP`: Client IP of the chat.
- `Count`: Number of inputs and outputs for this chat.
- `Token count`: The total number of tokens used for this chat.
- `Price`: Total price spent on this chat.
- `Messages`: Showing the content of the chat's message.
- `Store`: Display the Store to which the chat belongs.
- `Category`: Display the Category to which the chat belongs.

Messages

📄 Overview

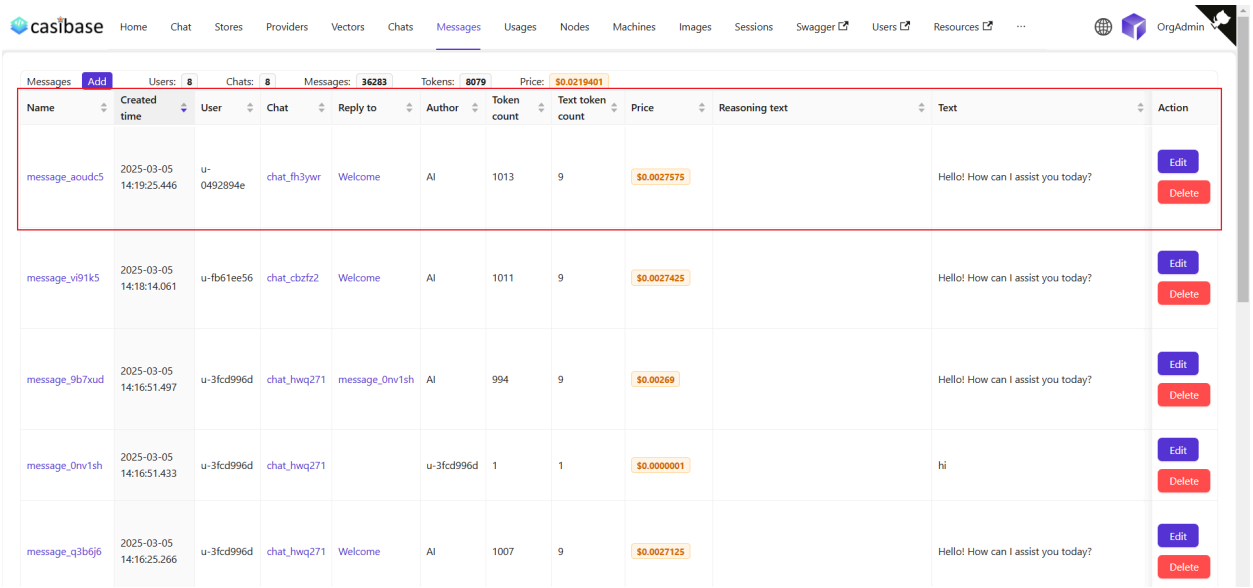
Messages Overview

Overview

In this section, we introduce the functionality of message in Casibase.

Messages

The messages module manages all the messages in our sessions, it shows the creation time of each message, the chat it belongs to, the parent message, the number of tokens, the price, the text message of the reply, the vectors, the suggestions and so on.



Nodes

Overview

Casibase nodes Overview

RDP

Casibase nodes RDP

VNC

Casibase nodes VNC

Overview

Casibase helps you to manage nodes, and connect to your nodes remotely, including remote desktop via RDP, VNC, SSH, and Telnet.

Protocol:

- SSH
- RDP
- VNC
- Telnet

Every node has the following basic properties:

- `Organization`: The organization that the node belongs to.
- `Name`: The unique node name.
- `Description`: The Description of the node.
- `IP`: Domain name or IP address.
- `Protocol`: The port number of the Protocol.
- `Port`: The port number of the node.
- `Username`: The username to connect to the node, such as `root`, `administrator`, `sa`, etc.
- `Password`: The password to connect to the node.
- `OS`: The operating system of the node, including `Windows` and `Linux`, used to classify the node.
- `Tag`: The tag of the node, used to classify the node.

In this chapter, you will learn how to start connecting to your nodes.

Let's explore together!

RDP

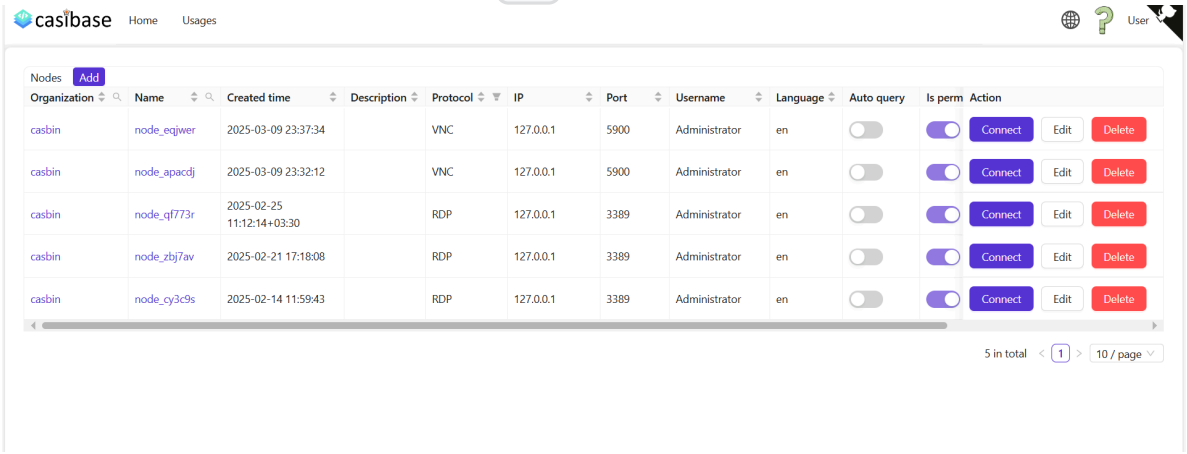
Casibase Support Connect to your nodes via RDP protocol:

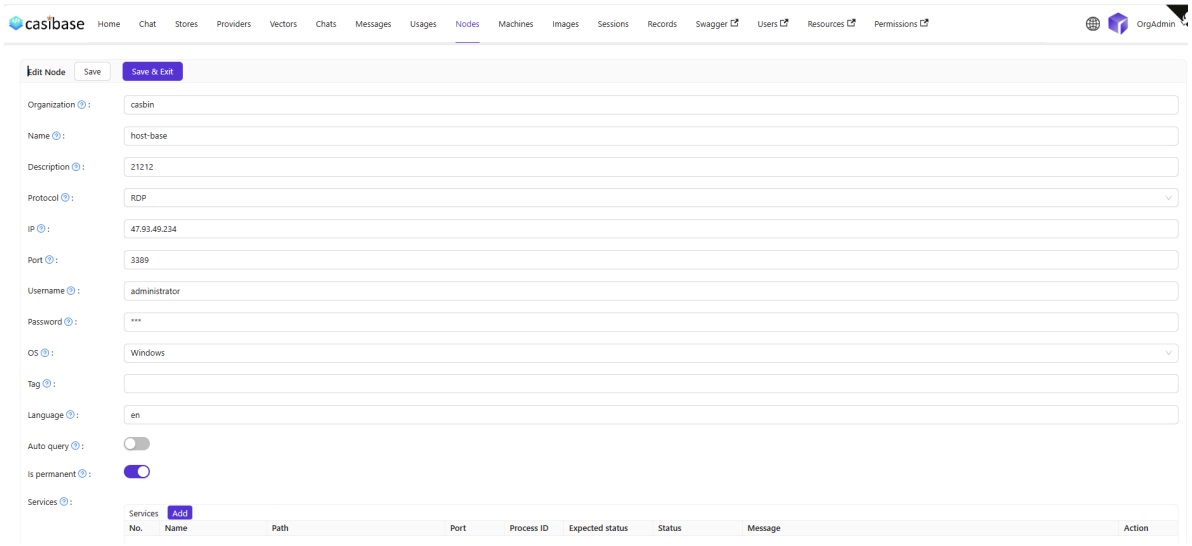
Rdp connection

1. Start Guacamole Server

```
docker run --name guacd -d -p 4822:4822 guacamole/guacd
```

2. Add a new node, set protocol to `rdp`



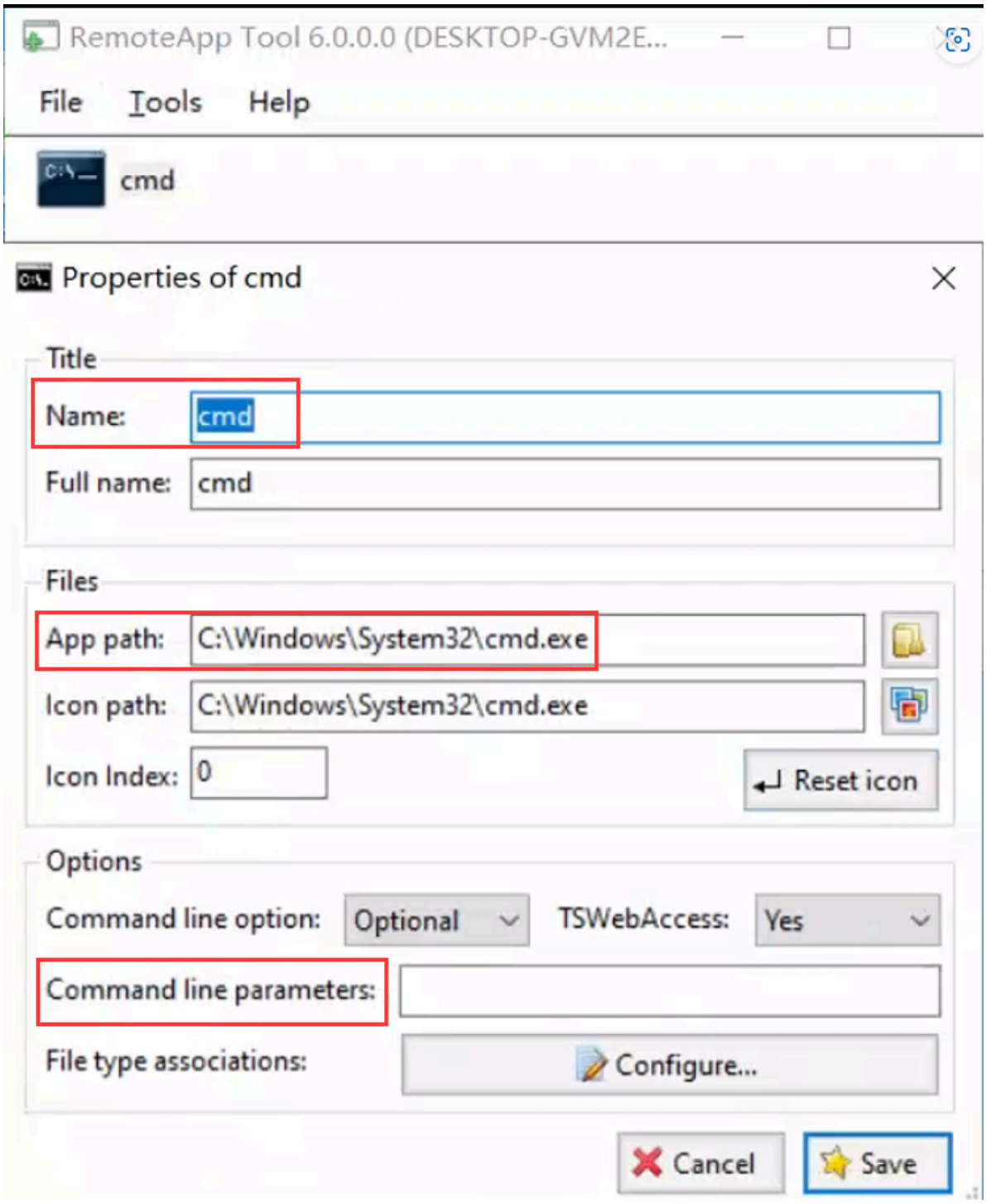


3. Connect to your node by clicking the `connect` button

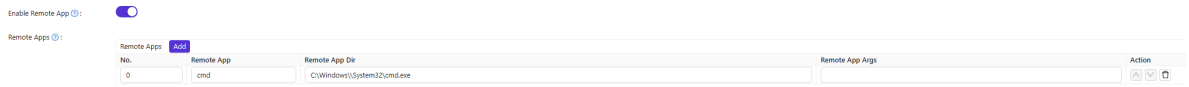
Remote App

We support remote app on Windows nodes, you can add remote apps on `node Edit` page, and then you can connect to your remote app by clicking the `connect` button.

1. Configure your remote app on the server end.
   You can use RemoteApp Tool to register apps.



2. Configure the remote app information in the node edit page according to the server-end configuration. 'remoteAppName', 'remoteAppDir', and 'remoteAppArgs' are required.



refer to Configuring Guacamole — Apache Guacamole Manual v1.5.3

3. Connect to your remote app.

VNC

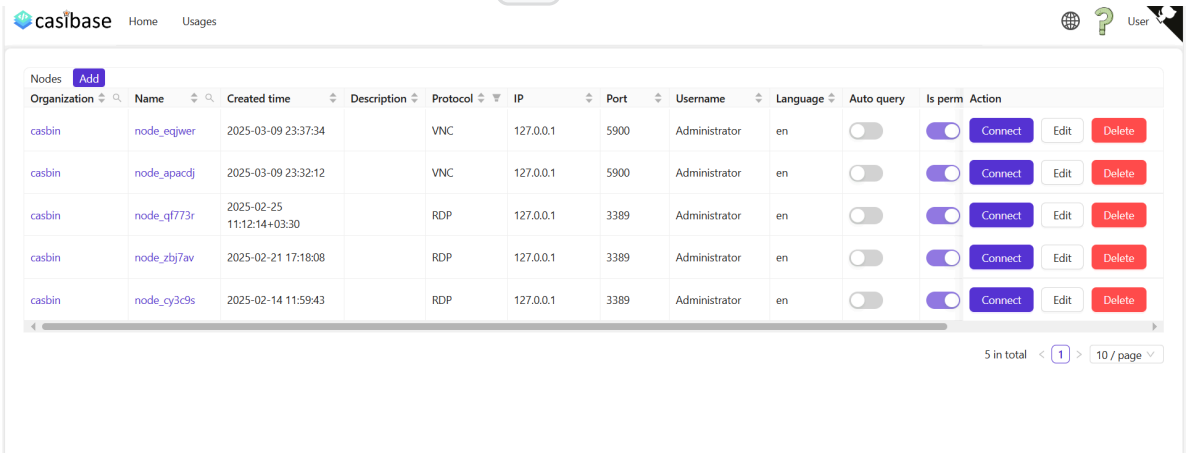
VCN Connect

VCN connection is similar to RDP connections.

1. Start Guacamole Server

```
docker run --name guacd -d -p 4822:4822 guacamole/guacd
```

2. Add a new node, set protocol to `vnc`



3. Connect to your node by clicking the `connect` button.