

Conversational Bot Service

Overview

Issue 01
Date 2024-01-15



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1 Conversational Bot Service Infographics

What Is Conversational Bot Service?

1 What Are the Challenges Faced by Traditional Conversational Bots?

- Give irrelevant answers
- Cannot understand difficult questions
- Manual conversation reviewing is inefficient
- Manual service is expensive

2 What Is Huawei Cloud Conversational Bot Service (CBS)?

Huawei Cloud CBS is a next-generation intelligent man-machine conversation service. It provides intelligent text Q&A, voice assistants, and AI virtual human services and can be used for scenarios such as online customer service, office assistants, and digital employees.

Application Scenarios	Government	Healthcare	Education
	Automotive	Internet	Finance and insurance

Service	Intelligent Q&A	Intelligent outbound call
	Conversation assistant	Semantic search / AI virtual human

Language Understanding	Text classification	Topic analysis	Sentence recognition
	Intent recognition	Slot filling	Information extraction

Language Generation	Text generation	Text summary
	Text error correction	Machine translation

Basic Algorithms	Word segmentation	Word vector
	Naming entity recognition	Language models

Knowledge Graphs	Information extraction	Knowledge completion
	Entity link	Attribute mapping

Intelligent QABot

QABot helps enterprises quickly build, release, and manage intelligent chatbots.

Advantages

- Intelligent Q&A management
- Comprehensive conversation management
- Efficient training and deployment

Application Scenarios

- After-sale automated Q&A
- Agent assistant
- Pre-sale consulting

AI virtual human

Huawei Cloud AI virtual humans are developed based on a Huawei-developed virtual brain. Virtual human applications can be rolled out in just a few hours after only minutes of training. Driven by text or voice, virtual humans can be used in scenarios such as industry broadcast and e-commerce livestreaming. Based on a virtual brain, knowledge systems can be built to support real-time interaction.

Advantages

- Perceptive:** 90%+ accurate recognition of human video body movements, and emotions
- Articulate:** Real-time semantics-driven interaction and human-like oral expression
- Knowledgeable:** Customized knowledge bases within brain-based on massive general knowledge
- Evolving:** Proactive knowledge acquisition and update closed-loop knowledge management

Application Scenarios

- Virtual anchor
- Exhibition hall presenter
- City IP
- Virtual customer service
- Virtual assistants for 5G voice calls

2 CBS

Conversational Bot Service (CBS) is a cloud-based AI service that you can use to build enterprise-grade conversational bots. Question Answering Bot (QABot) is a common use case. QABot helps enterprises quickly build, release, and manage intelligent question-answering bots.

- QABot

QABot

QABot helps enterprises quickly build, release, and manage intelligent question-answering bots. It can be applied to various scenarios such as after-sales automated Q&A, agent assistant, and pre-sales consulting.

QABot offers the Q&A engine and bot management platform to help customers quickly and cost-efficiently build intelligent Q&A services. It meets users' requirements for quick launch, high-level customization, and controllable data and features high Q&A accuracy and automated learning capabilities. QABot helps enterprises cut customer service personnel costs and greatly reduces customer service response time.

QABot has the following advantages:

- Intelligent Q&A management
 - Automatically analyze and collect statistics on hot questions and trends.
 - Automatically gather unanswered questions, match similar Q&A pairs, and continuously enrich the knowledge base.
 - Debug question answering and provide point-to-point and intelligent monitoring of the entire question answering process.
 - Provide easy-to-use labeling tools to mine domain-specific knowledge.
- Comprehensive conversation management
 - Integrate multiple NLP capabilities and an intelligent conversation controller.
 - Flexibly manage the knowledge base with batch operations.
- Efficient training and deployment
 - Provide fast model training and deployment capabilities based on ModelArts algorithms.

- The effects of different data, parameters, and models on the service system can be verified quickly.
- Provide a selection of algorithm models, with recommendations for optimal parameter settings, ensuring questions are answered effectively.

3 Application Scenarios

QABot

QABot automatically answers questions from customers, collects frequently asked, easy-to-understand questions, and mines Q&A pairs and builds knowledge bases, improving question answering accuracy and reducing labor costs in customer service.

- **After-sale automated Q&A**
In this scenario, intelligent Q&A bots are used to perform automated, highly accurate handling of customer questions across a wide range of scenarios, such as after-sales support, questions on use, and troubleshooting. Bots can handle anywhere 30-80% of the questions depending on the situation, saving you big on labor costs.
- **Agent assistant**
In this scenario, a bot listens to the conversation between the human agent and the customer, extracts keywords, and searches for and displays possible answers to the customer's question. This way, it provides real-time support for the agent and significantly improves the agent's productivity and the customer's satisfaction.
- **Pre-sales consultant**
Powered by prebuilt product knowledge bases, a bot automatically answers questions from potential customers about products and services and can explain product features and provide comparisons on related products.

4 Basic Concepts

4.1 QABot

Intelligent Q&A

Intelligent Q&A offers question-and-answer bot services based on user-provided knowledge bases.

Q&A Pairs

Each Q&A pair consists of a question and an answer. Multiple Q&A pairs compose a knowledge base. Q&A bots answer questions based on prebuilt knowledge bases.

Standard Question

A standard question refers to a question expressed in the most standard way, meaning that is how it is most commonly phrased.

Extended Question

An extended question is a variation to the standard question, but it still expresses similar meanings. When creating a Q&A pair, you can add extended questions for the standard question to improve Q&A performance.

Question Category

Users can categorize standard questions as required, for example, consulting questions and troubleshooting questions.

User Question

A user question refers to a question actually asked by a real user.

Channels

This refers to the maximum number of conversations a bot can handle at a time.

Knowledge Base

A knowledge base consists of Q&A pairs. It is where you configure and manage Q&A pairs.

5 Billing

Billing Modes

- Bot instance
QABot uses a pay-per-use billing mode. To use this service, you must purchase Q&A bots first. After you make the purchase, the system deducts fees from your cloud account based on the service duration you chose and the number of bot instances you purchased. For details about the pricing, see [Conversational Bot Service Price Calculator](#).
- API calling
After a bot instance is created, you will be charged by the number of times you call the QABot API. For details about the pricing, see [Conversational Bot Service Price Calculator](#).

Overdue Payment

If your account balance is insufficient to pay for the current expense, your account will be in arrears. Your resources will be retained, but you will not be able to use the service. You cannot use your resources if you do not pay off the arrears before the retention period ends. If outstanding bills are still not cleared after the retention period expires, your data stored in the cloud will be deleted and your resources will be released. For details, see [Service Suspension and Resource Release](#).

If your account is in arrears, some operations will be restricted. You are advised to top up your account as soon as possible. The restricted operations are as follows:

- You cannot create new QABot resources.
- You cannot call APIs that are made available on a pay-per-use basis.
- You cannot subscribe to new services.

Unsubscription

If you need to unsubscribe from CBS, see [Unsubscribing from a Cloud Service](#).

6 Permissions Management

If you need to assign different permissions to employees in your enterprise to access your CBS resources, Identity and Access Management (IAM) is a good choice for fine-grained permissions management. IAM provides identity authentication, permissions management, and access control, helping you secure access to your HUAWEI CLOUD resources.

You can create IAM users under your Huawei Cloud account, and assign permissions to these users to control their access to specific resource types. For example, some software developers in your enterprise need to use CBS resources but must not delete them or perform any high-risk operations. To achieve this result, you can create IAM users for the software developers and grant them only the permissions required for using CBS resources.

If you do not need to create IAM users for permissions management, skip this chapter.

IAM can be used free of charge. You pay only for the resources in your account. For more information about IAM, see [IAM Service Overview](#).

CBS Permissions

By default, new IAM users do not have permissions assigned. You need to add a user to one or more groups, and attach permissions policies or roles to these groups. Users inherit permissions from the groups to which they are added and can perform specified operations on cloud services based on the permissions.

CBS is a project-level service deployed in specific physical regions. Therefore, CBS permissions are assigned to target projects (ap-southeast-1) in specific regions (such as CN-Hong Kong) and only take effect in these regions. If you want the permissions to take effect in all regions, assign the permissions to projects in each region. When accessing CBS, the users need to switch to a region where they have been authorized to use cloud services.

Table 1 lists all system-defined roles supported by CBS. HUAWEI CLOUD services interwork with each other, and roles of some services are dependent on roles of other services to take effect. When assigning CBS permissions to users, you need to also assign dependent roles for the VPC permissions to take effect.

Table 6-1 System-defined role supported by CBS

Role Name	Description
CBS Administrator	CBS administrator with full permissions.
CBS Guest	CBS guests, who can call all query and Q&A APIs, access the console, and view statistics. Guests cannot add, delete, or modify Q&A pairs or chatbots.

Helpful Links

- [IAM Service Overview](#)
- [Creating a User Group and User, and Granting CBS Permissions](#)

7 Related Services

Identity and Access Management (IAM)

IAM lets you control user authentication and access to CBS.

8 Constraints

QABot

The specifications on the use of QABot are as follows:

Table 8-1 QABot specifications

Item	Restriction
Bot	Each user can create up to 10 bots.
Question	<ol style="list-style-type: none"> 1. A maximum of 5,000 Q&A pairs can be configured. 2. A question contains up to 512 characters. 3. The total number of standard questions and extended questions cannot exceed 10,000.
Answer	An answer contains up to 20,000 characters.
Extended question	<ol style="list-style-type: none"> 1. A maximum of 200 extended questions can be contained in each standard question. 2. An extended question contains up to 512 characters.
Question category	<ol style="list-style-type: none"> 1. A question category contains 64 characters at most. 2. A maximum of 200 question categories are supported.

9 Accessing CBS

You can access CBS on a web-based management console or using HTTPS-based APIs.

- Using APIs
Use APIs to access CBS if you need to integrate CBS on the public cloud into a third-party system for secondary development. For detailed operations, see the [Conversational Bot Service API Reference](#).
- Using the management console
To perform other operations, access CBS using the management console. If you have registered with the public cloud, log in to the management console and choose **EI Enterprise Intelligence > Conversational Bot Service** from the service list.