Conversational Bot Service

API Reference

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1 Before You Start

1.1 Overview

Welcome to *Conversational Bot Service API Reference*. Conversational Bot Service (CBS) is an AI cloud service that powers intelligent enterprise applications such as Question Answering Bot (QABot).

If you plan to access CBS through an API, ensure that you are familiar with CBS concepts. For details, see **Service Overview**.

1.2 API Calling

CBS supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS requests. For details about API calling, see **Calling APIs**.

1.3 Endpoints

An endpoint is the request address for calling an API. Endpoints vary depending on services and regions. For the endpoints of all services, see **Regions and Endpoints**.

1.4 Restrictions and Limitations

You can create 10 Q&A bots by default. To increase the quota, contact HUAWEI CLOUD engineers. For details, see the API description and **Restrictions** in the *Conversational Bot Service Overview*.

1.5 Concepts

- Account

  An account is created upon successful registration with HUAWEI CLOUD. The account has full access permissions for all of its cloud services and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity. You should not directly use an account to

perform routine management. For security purposes, create users and grant them permissions for routine management.

- IAM user

  A user is created to use cloud services. Each user has their own identity credentials (password and access keys).

  You can view the account ID and user ID on the **My Credentials** page of the console. The account name, username, and password will be required for API authentication.

- Region

  Regions are divided based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared within the same region. Regions are classified as universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides services of the same type or only provides services for specific tenants.

- AZ

  AZs are physically isolated locations in a region, but are interconnected through an internal network for enhanced application availability.

- Project

  Projects group and isolate resources (including compute, storage, and network resources) across physical regions. A default project is provided for each HUAWEI CLOUD region, and subprojects can be created under each default project. Users can be granted permissions to access all resources in a specific project. For more refined access control, create subprojects under a project and purchase resources in the subprojects. Users can then be assigned permissions to access only specific resources in the subprojects.

  Figure 1-1 Project isolating model
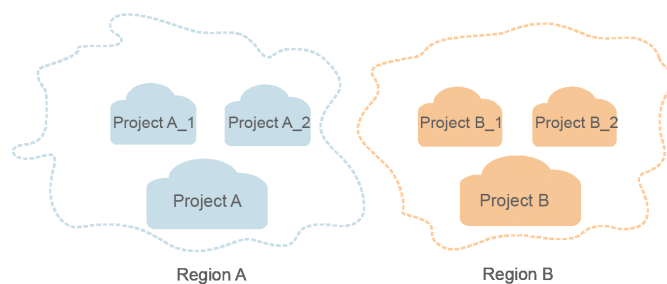
2 API Overview

The following table lists CBS APIs.

Table 2-1 API description

Type	Description
Online Q&A APIs of QABot	Main function APIs for question obtaining prompt, Q&A satisfaction evaluation, transferring a conversation to a human agent, single-round Q&A.

3 Calling APIs

3.1 Making an API Request

This section describes the structure of a REST API, and uses the IAM API for **obtaining a user token** as an example to demonstrate how to call an API. The obtained token can then be used to authenticate the calling of other APIs.

Figure 3-1 Example request
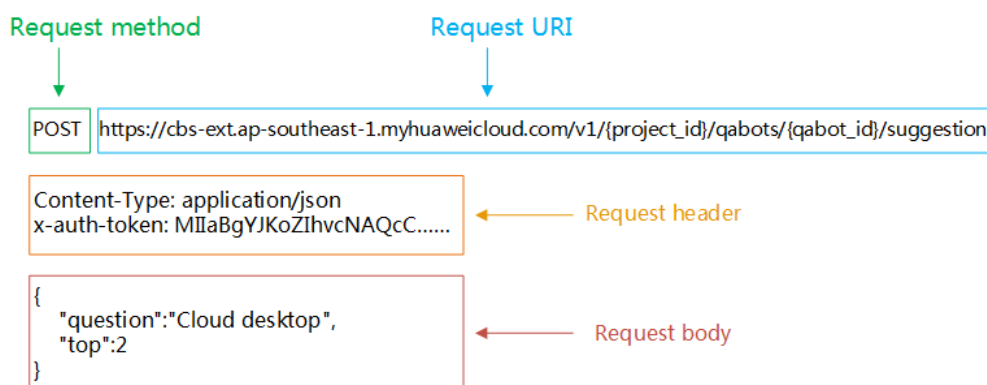
Request URI

A request URI is in the following format:

{URI-scheme} :// {Endpoint} / {resource-path} ? {query-String}

Although a request URI is included in a request header, most programming languages or frameworks require the request URI to be transmitted separately.

Table 3-1 URI parameters

Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.

Parameter	Description
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from **Regions and Endpoints**.
resource-path	Resource path, that is, the API access path. Obtain the path from the URI of an API. For example, the **resource-path** of the CBS API used to obtain the list of questions is **/v1/{*project_id*}/qabots/{*qabot_id*}/suggestions**. **{*project_id*}** indicates the project ID, which can be obtained by referring to **Obtaining a Project ID**. **{*qabot_id*}** indicates the Q&A bot ID, which can be obtained from the QABot console of CBS.
query-String	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of "*Parameter name=Parameter value*". For example, **? limit=10** indicates that a maximum of 10 data records will be displayed. This parameter is not used.

For example, to obtain the list of questions in the **CN-Hong Kong** region, obtain the endpoint (**cbs-ext.ap-southeast-1.myhuaweicloud.com**) of this region and the **resource-path** (**/v1/{*project_id*}/qabots/{*qabot_id*}/suggestions**) in the URI of the API used to **obtain the list of questions**. Then, construct the URI as follows:

```
https://cbs-ext.ap-southeast-1.myhuaweicloud.com/v1/{project_id}/qabots/{qabot_id}/suggestions
```

Figure 3-2 Example URI

| Https | :// | cbs-ext.ap-southeast-1.myhuaweicloud.com | /v1/{project_id}/qabots/{qabot_id}/suggestions |

URI-scheme   Endpoint   resource-path

☐☐ **NOTE**

To simplify the URI display in this document, each API is provided only with a **resource-path** and a request method. The **URI-scheme** value of all APIs is **HTTPS**, and the endpoints of all APIs in the same region are identical.

Request Methods

The HTTP protocol defines the following request methods that can be used to send a request to the server:

Table 3-2 HTTPS methods

Method	Description
GET	requests the server to return specified resources.
PUT	requests the server to update specified resources.
POST	requests the server to add resources or perform special operations.
DELETE	requests the server to delete specified resources, for example, an object.
HEAD	same as GET except that the server must return only the response header.
PATCH	requests the server to update partial content of a specified resource. If the resource does not exist, a new resource will be created.

In the case of the API used to **obtain the list of questions**, the request method is **POST**. The request is as follows:

POST https://cbs-ext.ap-southeast-1.myhuaweicloud.com/v1/{project_id}/qabots/{qabot_id}/suggestions

Request Header

You can also add additional header fields to a request, such as the fields required by a specified URI or HTTP method. **Table 3-3** describes common request headers. For details about the request authentication information, see **Authentication**.

Table 3-3 Common request header fields

Parameter	Description	Mandatory	Example
Content-type	MIME type of the body in the request.	Yes	application/json
Content-Length	Length of the request body. The unit is byte.	This parameter is optional for POST or PUT requests, but not required for GET requests.	3495
X-Auth-Token	User token. It is used to obtain the permission to call APIs. For details about how to obtain the value, see **Token Authentication**.	Yes	MIINRwYJKoZIhvc NAQcCoIINODCC DTQCAQExDTALB glghkgBZQMEAgE wgguVBgkqhkiG...

Parameter	Description	Mandatory	Example
X-Language	Request language type.	No. The default value is **zh-cn**.	en-us

☐ NOTE

In addition to supporting token-based authentication, public cloud APIs also support authentication using access key ID/secret access key (AK/SK). During AK/SK-based authentication, an SDK is used to sign the request, and the **Authorization** (signature information) and **X-Sdk-Date** (time when the request is sent) header fields are automatically added to the request.

For more details, see **AK/SK-based Authentication**.

The API used to **obtain the list of questions** does not require authentication. Therefore, **Content-Type** and **X-Auth-Token** fields needs to be added to requests for calling the API. An example of such requests is as follows:

```
POST https://cbs-ext.ap-southeast-1.myhuaweicloud.com/v1/{project_id}/qabots/{qabot_id}/suggestions
Content-Type: application/json
X-Auth-Token: MIIaBgYJKoZIhvcNAQcC...
```

Request Body

A request body is generally sent in a structured format (for example, JSON or XML). It corresponds to **Content-type** in the request header and is used to transfer content other than the request header. If the request body contains Chinese characters, these characters must be coded in UTF-8.

The request body varies between APIs. Some APIs do not require the request body, such as the APIs requested using the GET and DELETE methods.

For the API of **obtaining the list of questions**, obtain the request parameters and parameter description in the API request. The following provides an example request with a body included.

```
POST https://cbs-ext.ap-southeast-1.myhuaweicloud.com/v1/{project_id}/qabots/{qabot_id}/suggestions
Content-Type: application/json
X-Auth-Token: MIIaBgYJKoZIhvcNAQcC...
{
    "question":" Cloud desktop",
    "top":2
}
```

If all data required for the API request is available, you can send the request to call the API through curl, Postman, or coding. For the API of **obtaining the list of questions**, obtain the request parameters and parameter descriptions from the response message.

3.2 Authentication

Requests for calling an API can be authenticated using either of the following methods:

● Token-based authentication: Requests are authenticated using a token.

- AK/SK-based authentication: Requests are authenticated by encrypting the request body using an AK/SK pair.

Token-based Authentication

A token specifies temporary permissions in a computer system. A token specifies temporary permissions in a computer system. During API authentication using a token, the token is added to requests to obtain permissions for calling the API.

📖 NOTE

The validity period of a token is 24 hours. When using a token for authentication, cache it to prevent frequently calling the IAM API used to obtain a user token.

You can call a CBS API only after obtaining a token for authentication. To obtain a token, do the following:

Set the username (*username*), domain name (*domainname*), and login password (*********).

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json

{
    "auth": {
        "identity": {
            "methods": [
                "password"
            ],
            "password": {
                "user": {
                    "name": "username",
                    "password": "*******",
                    "domain": {
                        "name": "domainname"
                    }
                }
            }
        },
        "scope": {
            "project": {
                "name": "ap-southeast-1"
            }
        }
    }
}
```

As shown in the following picture, **x-subject-token** in the response header is the desired user token. This token can then be used to call CBS APIs. For details about how to obtain a token, see **Obtaining a User Token**.

Figure 3-3 Header fields of the response to the request for obtaining a user token

AK/SK-based Authentication

□ NOTE

> AK/SK-based authentication supports API requests with a body not larger than 12 MB. For API requests with a larger body, token-based authentication is recommended.

In AK/SK-based authentication, AK/SK is used to sign requests and the signature is then added to the requests for authentication.

- AK: access key ID, which is a unique identifier used in conjunction with a secret access key to sign requests cryptographically.
- SK: secret access key used in conjunction with an AK to sign requests cryptographically. It identifies a request sender and prevents the request from being modified.

In AK/SK-based authentication, you can use an AK/SK to sign requests based on the signature algorithm or use the signing SDK to sign requests. For details about how to sign requests and use the signature SDK, see **API Request Signing Guide**.

If no AK/SK has been generated, log in to , access the **My Credentials** page, and choose **Access Keys** > **Create Access Key** to obtain the access keys.

NOTICE

The signing SDK is only used for signing requests and is different from the SDKs provided by services.

3.3 Response

Status Code

After sending a request, you will receive a response, including a status code, response header, and response body.

A status code is a group of digits, ranging from 1xx to 5xx. It indicates the status of a request. For more information, see **Status Code**.

If status code 200 is returned for the calling of CBS APIs, the request is successful.

Response Header

Similar to a request, a response also has a header, for example, **Content-Type**. A response header in CBS has no special purpose and can be used to locate faults.

Response Body

The body of a response is often returned in structured format as specified in the **Content-Type** header field. The response body transfers content except the response header.

For the API used to **obtain the list of questions**, the following request body is returned. For details about the format, see the **obtaining the list of questions** response.

```
{
    "questions":[
      "Failed to open the cloud desktop.",
      "Failed to log in to the cloud desktop."
    ]
}
```

If an error occurs during API calling, an error code and a message will be displayed. The following shows an error response body.

```
{
    "error_code": "CBS.0022",
    "error_msg": "question can not be null"
}
```

In the response body, **error_code** is an error code, and **error_msg** provides information about the error.

4 QABot APIs

4.1 Other APIs

4.1.1 Obtaining Questions Prompted When a User Enters a Question

Function Description

This API is used to obtain the list of questions prompted when a user enters a question.

URI

POST https://{endpoint}/v1/{project_id}/qabots/{qabot_id}/suggestions

Table 4-1 Path parameters

Parameter	Mandatory	Type	Description
endpoint	Yes	String	Endpoint, which is the request address for calling an API. The endvertex varies depending on the service and region. You can obtain it from **Endpoints**.
project_id	Yes	String	Project ID, which is used for resource isolation. For details, see **Obtaining a Project ID**.

Parameter	Mandatory	Type	Description
qabot_id	Yes	String	Q&A bot ID, which is in the UUID format. For example, **303a0a00-c88a-43e3-aa2f-d5b8b9832b02**. This parameter is displayed in the **Q&A Bot Name/ID** column of the QABot console.

Request Parameters

Table 4-2 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. Used to obtain the permission to call APIs. The value of X-Subject-Token in the **Interface for Obtaining a Token** response header is the token.
Content-Type	Yes	String	Message body type (format). The value is application/json.

Table 4-3 Request body parameters

Parameter	Mandatory	Type	Description
question	Yes	String	Question entered by a user. If an empty string is entered, no data is returned. Enter 1 to 512 characters.
top	No	Integer	Maximum number of prompted questions. The default value is **5**. The value ranges from 1 to 10.

Response Parameters

Status code: 200

Table 4-4 Response body parameters

Parameter	Type	Description
questions	Array of strings	List of recommended questions.

Status code: 400

Table 4-5 Response body parameters

Parameter	Type	Description
error_code	String	Error code returned when the API fails to be called. This parameter is not included when the API is successfully called.
error_msg	String	Error message returned when the API fails to be called. This parameter is not included when the API is successfully called.

Example Requests

- Example request

```
POST https://{endpoint}/v1/41551a23c2be484cb0070631e323ee52/qabots/
b36a01da-7fc2-43f8-8990-218e57a94420/suggestions

Request Header:
    Content-Type: application/json
    X-Auth-Token:
MIINRwYJKoZIhvcNAQcCoIINODCCDTQCAQExDTALBglghkgBZQMEAgEwgguVBgkqhkiG...

Request Body:
{
    "question":" Cloud desktop",
    "top":2
}
```

- Python request code example

```python
import requests
url = "https://{endpoint}/v1/{project_id}/qabots/{qabot_id}/suggestions"
token = "Actual token value obtained by the user"
headers = {'Content-Type': 'application/json', 'X-Auth-Token': token}
body = {"question":"Desktop cloud","top":2}

response = requests.post(url, headers=headers, json=body, verify=False)
print(response.text)
```

- Java request code example

```java
import java.io.BufferedReader;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.io.OutputStreamWriter;
import java.net.HttpURLConnection;
import java.net.URL;

public class CBSDemo {

    public void cbsDemo() {
        try {
```

```
        //Replace endpoint, projectId, and qabot_id with the actual ones.
        URL url = new URL("https://{endpoint}/v1/{project_id}/qabots/{qabot_id}/suggestions");
        String token = "Actual token value obtained by the user";
        HttpURLConnection connection = (HttpURLConnection) url.openConnection();
        connection.setRequestMethod("POST");
        connection.setDoInput(true);
        connection.setDoOutput(true);
        connection.addRequestProperty("Content-Type", "application/json");
        connection.addRequestProperty("X-Auth-Token", token);

        //Input parameters
        String body = "{\"question\":\"Desktop cloud\",\"top\":2}";

        OutputStreamWriter osw = new OutputStreamWriter(connection.getOutputStream(),
"UTF-8");
        osw.append(body);
        osw.flush();
        InputStream is = connection.getInputStream();
        BufferedReader br = new BufferedReader(new InputStreamReader(is, "UTF-8"));
        while (br.ready()) {
            System.out.println(br.readLine());
        }
    } catch (Exception e) {
        e.printStackTrace();
    }
  }

  public static void main(String[] args) {
      CBSDemo CBSDemo = new CBSDemo();
      CBSDemo.cbsDemo();
  }
}
```

Example Responses

Status code: 200

Example of a successful response

```
{
    "questions":[
        "Failed to open the cloud desktop.",
        "Failed to log in to the cloud desktop."
    ]
}
```

Status code: 400

Example of a failed response

```
{
 "error_code": "CBS.0022",
 "error_msg": "question can not be null"
}
```

Status Code

For details about status codes, see **Status Code**.

Error Code

For details about error codes, see **Error Code**.

4.1.2 Q&A Satisfaction Evaluation

Function Description

After a user raises a question, the user evaluates whether the result returned by the intelligent Q&A is satisfactory. The API request parameter degree can be satisfied or dissatisfied. This API can be added to the answers returned by QABot to collect user feedback.

URI

POST https://{endpoint}/v1/{project_id}/qabots/{qabot_id}/requests/{request_id}/satisfaction

Table 4-6 Path parameters

Parameter	Mandatory	Type	Description
endpoint	Yes	String	Endpoint, which is the request address for calling an API. The endvertex varies depending on the service and region. You can obtain it from **Endpoints**.
project_id	Yes	String	Project ID, which is used for resource isolation. For details, see **Obtaining a Project ID**.
qabot_id	Yes	String	Q&A bot ID, which is in the UUID format. For example, **303a0a00-c88a-43e3-aa2f-d5b8b9832b02**. This parameter is displayed in the **Q&A Bot Name/ID** column of the QABot console.
request_id	Yes	String	Request ID.

Request Parameters

Table 4-7 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It is used to obtain the permission to call APIs. The value of X-Subject-Token in the **Interface for Obtaining a Token** response header is the token.
Content-Type	Yes	String	Message body type (format). The value is application/json.

Table 4-8 Request body parameters

Parameter	Mandatory	Type	Description
degree	Yes	Integer	Satisfaction score. Currently, the value can be **1** (satisfied) or **-1** (dissatisfied). Questions with dissatisfied answers will be added to the list of unresolved questions.

Response Parameters

Status code: 200

Table 4-9 Response body parameters

Parameter	Type	Description
request_id	String	Request ID returned when the API is successfully called. This parameter is not included when the API fails to be called.
updated_time	String	Date and time when the satisfaction score is returned. The format is yyyy-MM-dd THH:mm:ssZ. **T** is the separator between the calendar and the hourly notation of time. **Z** indicates Coordinated Universal Time (UTC). This parameter is not included when the API fails to be called.

Status code: 400

Table 4-10 Response body parameters

Parameter	Type	Description
error_code	String	Error code returned when the API fails to be called. This parameter is not included when the API is successfully called.
error_msg	String	Error message returned when the API fails to be called. This parameter is not included when the API is successfully called.

Example Requests

- Example request
  ```
  POST https://{endpoint}/v1/1604d8170cd84440a81281e5a3a04f8b/qabots/303a0a00-c88a-43e3-aa2f-d5b8b9832b02/requests/303a0a00-c88a/satisfaction

  Request Header:
      Content-Type: application/json
      X-Auth-Token:
  MIINRwYJKoZlhvcNAQcCoIINODCCDTQCAQExDTALBglghkgBZQMEAgEwgguVBgkqhkiG...

  Request Body:
  {
      "degree":1
  }
  ```

- Python request code example
  ```python
  import requests
  url = "https://{endpoint}/v1/{project_id}/qabots/{qabot_id}/requests/{request_id}/satisfaction"
  body = {"degree":1}
  token = "Actual token value obtained by the user"
  headers = {'Content-Type': 'application/json', 'X-Auth-Token': token}

  response = requests.post(url, headers=headers, json=body, verify=False)
  print(response.text)
  ```

- Java request code example
  ```java
  import java.io.BufferedReader;
  import java.io.InputStream;
  import java.io.InputStreamReader;
  import java.io.OutputStreamWriter;
  import java.net.HttpURLConnection;
  import java.net.URL;

  public class CBSDemo {

      public void cbsDemo() {
          try {
              //Replace endpoint, projectId, and qabot_id with the actual ones.
              URL url = new URL("https://{endpoint}/v1/{project_id}/qabots/{qabot_id}/requests/
  {request_id}/satisfaction");
              String token = "Actual token value obtained by the user";
              HttpURLConnection connection = (HttpURLConnection) url.openConnection();
              connection.setRequestMethod("POST");
              connection.setDoInput(true);
              connection.setDoOutput(true);
              connection.addRequestProperty("Content-Type", "application/json");
              connection.addRequestProperty("X-Auth-Token", token);

              //Input parameters
  ```

```
        String body = "{\"degree\":1}";

        OutputStreamWriter osw = new OutputStreamWriter(connection.getOutputStream(),
"UTF-8");
        osw.append(body);
        osw.flush();
        InputStream is = connection.getInputStream();
        BufferedReader br = new BufferedReader(new InputStreamReader(is, "UTF-8"));
        while (br.ready()) {
            System.out.println(br.readLine());
        }
    } catch (Exception e) {
        e.printStackTrace();
    }
}

public static void main(String[] args) {
    CBSDemo CBSDemo = new CBSDemo();
    CBSDemo.cbsDemo();
}
}
```

Example Responses

Status code: 200

Example of a successful response

```
{
    "request_id":"303a0a00-c88a",
    "updated_time":"2017-02-07T17:34:02Z"
}
```

Status code: 400

Example of a failed response

```
{
 "error_code": "CBS.0099",
 "error_msg": "request body invalid."
}
```

Status Code

For details about status codes, see **Status Code**.

Error Code

For details about error codes, see **Error Code**.

4.1.3 Labeling and Transferring a Conversation to a Human Agent

Function Description

This API is used to label and transfer a conversation to a human agent after the Q&A bot returns an answer to a question. The question will be added to the list of unresolved questions.

URI

POST https://{endpoint}/v1/{project_id}/qabots/{qabot_id}/requests/{request_id}/labor

Table 4-11 Path parameters

Parameter	Mandatory	Type	Description
endpoint	Yes	String	Endpoint, which is the request address for calling an API. The endvertex varies depending on the service and region. You can obtain it from **Endpoints**.
project_id	Yes	String	Project ID, which is used for resource isolation. For details, see **Obtaining a Project ID**.
qabot_id	Yes	String	Q&A bot ID, which is in the UUID format. For example, **303a0a00-c88a-43e3-aa2f-d5b8b9832b02**. This parameter is displayed in the **Q&A Bot Name/ID** column of the QABot console.
request_id	Yes	String	Request ID.

Request Parameters

Table 4-12 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It is used to obtain the permission to call APIs. The value of X-Subject-Token in the **Interface for Obtaining a Token** response header is the token.
Content-Type	Yes	String	Message body type (format). The value is application/json.

Response Parameters

Status code: 200

Table 4-13 Response body parameters

Parameter	Type	Description
request_id	String	Request ID returned when the API is successfully called. This parameter is not included when the API fails to be called.
updated_time	String	Date and time when a call is handed off to a human agent. The format is yyyy-MM-dd THH:mm:ssZ. **T** is the separator between the calendar and the hourly notation of time. **Z** indicates Coordinated Universal Time (UTC). This parameter is not included when the API fails to be called.

Status code: 400

Table 4-14 Response body parameters

Parameter	Type	Description
error_code	String	Error code returned when the API fails to be called. This parameter is not included when the API is successfully called.
error_msg	String	Error message returned when the API fails to be called. This parameter is not included when the API is successfully called.

Example Requests

- Example request
  ```
  POST https://{endpoint}/v1/1604d8170cd84440a81281e5a3a04f8b/qabots/303a0a00-c88a-43e3-aa2f-d5b8b9832b02/requests/{request_id}/labor

  Request Header:
      Content-Type: application/json
      X-Auth-Token:
  MIINRwYJKoZIhvcNAQcCoIINODCCDTQCAQExDTALBglghkgBZQMEAgEwgguVBgkqhkiG...
  ```

- Python request code example
  ```
  import requests
  url = "https://{endpoint}/v1/{project_id}/qabots/{qabot_id}/requests/{request_id}/labor"
  token = "Actual token value obtained by the user"
  headers = {'Content-Type': 'application/json', 'X-Auth-Token': token}

  response = requests.post(url, headers=headers, verify=False)
  print(response.text)
  ```

- Java request code example
  ```
  import java.io.BufferedReader;
  import java.io.InputStream;
  import java.io.InputStreamReader;
  import java.io.OutputStreamWriter;
  ```

```
import java.net.HttpURLConnection;
import java.net.URL;

public class CBSDemo {

    public void cbsDemo() {
        try {
            //Replace endpoint, projectId, and qabot_id with the actual ones.
            URL url = new URL("https://{endpoint}/v1/{project_id}/qabots/{qabot_id}/requests/
{request_id}/labor");
            String token = "Actual token value obtained by the user";
            HttpURLConnection connection = (HttpURLConnection) url.openConnection();
            connection.setRequestMethod("POST");
            connection.setDoInput(true);
            connection.setDoOutput(true);
            connection.addRequestProperty("Content-Type", "application/json");
            connection.addRequestProperty("X-Auth-Token", token);

            InputStream is = connection.getInputStream();
            BufferedReader br = new BufferedReader(new InputStreamReader(is, "UTF-8"));
            while (br.ready()) {
                System.out.println(br.readLine());
            }
        } catch (Exception e) {
            e.printStackTrace();
        }
    }

    public static void main(String[] args) {
        CBSDemo CBSDemo = new CBSDemo();
        CBSDemo.cbsDemo();
    }
}
```

Example Responses

Status code: 200

Example of a successful response

```
{
    "request_id":"303a0a00-c88a",
    "updated_time":"2017-02-07T17:34:02Z"
}
```

Status code: 400

Example of a failed response

```
{
    "error_code":"CBS.3254",
    "error_msg":"resource not exist"
}
```

Status Code

For details about status codes, see **Status Code**.

Error Code

For details about error codes, see **Error Code**.

4.1.4 Single-Round Q&A (Offline Soon)

Function Description

For QABot, questions entered by users serve as the input, and top N (N is 5 by default) knowledge points matching the input serve as the output. The knowledge points are sorted by score in descending order.

📖 NOTE

If the returned knowledge point contains the answer, the matched answer is returned. If the returned knowledge point does not contain the answer, the recommended question is returned.

URI

POST https://{endpoint}/v1/{project_id}/qabots/{qabot_id}/requests

Table 4-15 Path parameters

Parameter	Mandatory	Type	Description
endpoint	Yes	String	Endpoint, which is the request address for calling an API. The endpoint varies depending on services in different regions. For more details, see **Endpoints**.
project_id	Yes	String	Project ID, which is used for resource isolation. For details, see **Obtaining a Project ID**.
qabot_id	Yes	String	Q&A bot ID, which is in the UUID format. For example, **303a0a00-c88a-43e3-aa2f-d5b8b9832b02**. This parameter is displayed in the **Q&A Bot Name/ID** column of the QABot console.

Request Parameters

Table 4-16 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. It is used to obtain the permission to call APIs. The token is the value of **X-Subject-Token** in the response header in **Authentication**.
Content-Type	Yes	String	Message body type (format). The value is **application/json**.

Table 4-17 Request body parameters

Parameter	Mandatory	Type	Description
session_id	Yes	String	Session ID, which is a custom character string used to differentiate sessions.
user_id	No	String	User ID, which uniquely identifies a user.
question	Yes	String	User question.
extends	No	**Extends** object	Extended parameter.
threshold_enable	No	Boolean	Value **true** indicates that the internal threshold is enabled. If this parameter is set to **true**, the answer with threshold processing performed is returned. Value **false** indicates that the internal threshold is disabled. If this parameter is set to **false**, the original answer is returned.
chat_enable	No	Boolean	The default value is **true**. **true** indicates that the chit-chat is used when the bot does not know how to reply. **false** indicates that the chit-chat is not used when the bot does not know how to reply.

Parameter	Mandatory	Type	Description
operate_type	No	Integer	Transferred when the API is called to label the Q&A behavior. The default value is **0**. It is displayed in the Q&A log. • Value **0** indicates that a user inputs a question. • Value **1** indicates that a user clicks a question from the hot questions. • Value **3** indicates that a user clicks a question in the **Recommend Questions** area. • Value **4** indicates that a user clicks a question in the prompted questions.

Table 4-18 Extends

Parameter	Mandatory	Type	Description
domains	No	Array of strings	Domain list. Multiple domains are separated by semicolons (;). If certain domains are specified, the API matches answers from the domains. If no domains are specified, the API matches answers from the entire knowledge base of the user. Currently, a maximum of 10 domains are supported.
top	No	Integer	Number of answers. The default value is **5**. The value ranges from 1 to 10.

Response

Status code: 200

Table 4-19 Response body parameters

Parameter	Type	Description
request_id	String	Request ID. This parameter is not included when the API fails to be called.
question	String	Question. This parameter is not included when the API fails to be called.
answers	Array of **Answers** objects	Set of questions similar to the user question. This parameter is not included when the API fails to be called.
extends	**Extends** object	Extended parameter. This parameter is not included when the API fails to be called.

Table 4-20 Answers

Parameter	Type	Description
qa_pair_id	String	Q&A pair ID.
st_question	String	Standard question.
ex_questions	Array of **ExQuestions** objects	Extended question.
answer	String	Answer.
score	Float	Similarity score, which is accurate to three decimal places.
domain	String	Problem category

Table 4-21 ExQuestions

Parameter	Type	Description
content	String	Extended question.

Table 4-22 Extends

Parameter	Manda tory	Type	Description
domains	No	Array of strings	Domain list. Multiple domains are separated by semicolons (;). If certain domains are specified, the API matches answers from the domains. If no domains are specified, the API matches answers from the entire knowledge base of the user. Currently, a maximum of 10 domains are supported.
top	No	Integer	Number of answers. The default value is **5**. The value ranges from 1 to 10.

Status code: 400

Table 4-23 Response body parameters

Parameter	Type	Description
error_code	String	Error code returned when the API fails to be called. This parameter is not included when the API is successfully called.
error_msg	String	Error message returned when the API fails to be called. This parameter is not included when the API is successfully called.

Example Requests

Example request
POST https://{endpoint}/v1/1604d8170cd84440a81281e5a3a04f8b/qabots/303a0a00-c88a-43e3-aa2f-d5b8b9832b02/requests

Request Header:
    Content-Type: application/json
    X-Auth-Token: MIINRwYJKoZIhvcNAQcCoIINODCCDTQCAQExDTALBglghkgBZQMEAgEwgguVBgkqhkiG...

Request Body:
{
    "user_id": "z00123456",
    "session_id": "xxxxxxxxxxxxxxxxx",
    "operate_type":3,
    "question": "What should I do if I fail to log in to my cloud desktop?"
    "extends":{
    "domains":" [Cloud desktop]",
    "top":5
    },
    "threshold_enable":false,
    "chat_enable":true
}

Example Responses

Status code: 200

Example of a successful response

- If the internal threshold is disabled (**threshold_enable** is set to **false**), the number of results is returned based on the value of **top**.

```
{
    "request_id": "303a0a00-c88a",
    "question": "What should I do if I cannot open my cloud desktop?",
    "answers": [
        {
            "qa_pair_id":"123",
            "st_question":"Why does my cloud desktop fail to be opened?",
            "answer":"Incorrect user account",
            "score":0.952,
            "domain":"Cloud desktop"
        },
        {

            "qa_pair_id":"123",
            "st_question":"Why would my cloud desktop fail to be opened?",
            "answer":"Incorrect user account",
            "score":0.901,
            "domain":"Cloud desktop"
        },
        {
            "qa_pair_id":"123",
            "st_question":"What is cloud desktop?",
            "answer": "Cloud desktop is a system that supports remote office.",
            "score":0.352,
            "domain":"Cloud desktop"
        },
        {
            "qa_pair_id":"123",
            "st_question": "Why does my computer desktop fail to be opened?",
            "answer": "Check whether the monitor is started.",
            "score":0.352,
            "domain":"Cloud desktop"
        },
    ]
}
```

- Enable the internal threshold.

Table 4-24 Internal threshold description

Condition	Result	Remarks
Score > 0.85	Q&A pairs whose scores have a difference within 0.05 from the highest score are returned.	If answers of Q&A pairs are specified, the Q&A pairs are returned. If answers are not specified, recommended Q&A pairs are returned.
0.70 < Score < 0.85	If there are Q&A pairs whose scores are in this range, Q&A pairs whose highest scores are in this range are returned. If there are no Q&A pairs whose scores are in this range, recommended Q&A pairs are returned.	
0.55 < Score < 0.70	Recommended Q&A pairs are returned.	

Condition	Result	Remarks
Score < 0.55	No Q&A pairs are returned.	

– Example 1

```
{
    "request_id": "303a0a00-c88a",
    "question": "What should I do if I cannot open my cloud desktop?",
    "answers": [
        {
            "qa_pair_id":"123",
            "st_question":"Why does my cloud desktop fail to be opened?",
            "ex_questions": [
                {
                    "content":"Cloud desktop"
                }
            ],
            "answer":"Incorrect user account",
            "top_score_question":"Why does my cloud desktop fail to be opened?",
            "score":0.952,
            "domain":"Cloud desktop"
        },
        {
            "qa_pair_id":"123",
            "st_question":"How to open the cloud desktop?",
            "ex_questions": [
                {
                    "content":"Desktop"
                }
            ],
            "answer":"Open the cloud desktop.",
            "top_score_question":"How to open the cloud desktop?",
            "score":0.912,
            "domain":"Cloud desktop"
        }
    ]
}
```

– Example 2

```
{
    "request_id": "303a0a00-c88a",
    "question": "What should I do if I cannot open my cloud desktop?",
    "answers": [
        {
            "qa_pair_id":"123",
            "st_question":"Why does my cloud desktop fail to be opened?",
            "top_score_question":"Why does my cloud desktop fail to be opened?",
            "answer":"Incorrect user account",
            "score":0.752,
            "domain":"Cloud desktop"
        }
        {
            "qa_pair_id":"123",
            "st_question":"Why would my cloud desktop fail to be opened?",
            "score":0.70,
            "domain":"Cloud desktop"
        },
        {
            "qa_pair_id":"123",
            "st_question":"What is cloud desktop?",
            "score":0.54,
            "domain":"Cloud desktop"
        }
    ]
}
```

– Example 3

```
{
   "request_id": "303a0a00-c88a",
   "question": "What should I do if I cannot open my cloud desktop?",
   "answers": [
   {
        "qa_pair_id":"123",
        "st_question":"Why would my cloud desktop fail to be opened?",
        "score":0.291,
        "domain":"Cloud desktop"
     },
     {
        "qa_pair_id":"123",
        "st_question":"What is cloud desktop?",
        "score":0.252,
        "domain":"Cloud desktop"
     }
   ]
}
```

- Have a chit-chat or ask a question with no matched answer.

```
{
   "request_id": "303a0a00-c88a",
   "question": "Hello",
   "answers": [
   {
        "answer": "Hello. May I help you?"

     }
   ]
}
```

Status code: 400

Example of a failed response

```
{
 "error_code": "CBS.0022",
 "error_msg": "session_id can not be null"
}
```

Status Code

For details about status codes, see **Status Code**.

Error Code

For details about error codes, see **Error Code**.

5 Data Structure

5.1 Common Request Parameters

Table 5-1 Common request header fields

Parameter	Description	Mandatory	Examples
Content-type	MIME type of the body in the request.	Yes	application/json
Content-Length	Length of the request body. The unit is byte.	This parameter is optional for POST or PUT requests, but not required for GET requests.	3495
X-Auth-Token	User token.	Yes	MIINRwYJKoZIhvc NAQcCoIINODCC DTQCAQExDTALB glghkgBZQMEAgE wgguVBgkqhkiG...
X-Language	Request language type.	No. The default value is **zh-cn**.	en-us

☐ **NOTE**

For details about other parameters in the header, see the HTTPS protocol documentation.

5.2 Common Response Parameters

Table 5-2 Common response header fields

Parameter	Description
Content-Length	Length of the response message body. The unit is byte.
Date	Time when the response is sent.
Content-type	MIME type of the body in the response.

6 Appendix

6.1 Status Code

- Normal

  200

- Abnormal

Return Value	Description
400 Bad Request	Request error.
401 Unauthorized	Authentication failed.
403 Forbidden	No operation permission.
500 Internal Server Error	Internal service error.
503 Service Unavailable	Service unavailable.

6.2 Error Code

If an error occurs in API calling, no result is returned. Identify the cause of error based on the error codes of each API. If an error occurs in API calling, HTTP status code $4xx$ or $5xx$ is returned. The response body contains the specific error code and information.

Format of an Error Response Body

If an error occurs during API calling, an error code and a message will be displayed. The following shows an error response body.

```
{
    "error_msg": "The format of message is error",
    "error_code": "AS.0001"
}
```

In the response body, **error_code** is an error code, and **error_msg** provides information about the error.

Error Code

If an error code starting with **APIGW** is returned after you call an API, rectify the fault by referring to the instructions provided in **API Gateway Error Codes**.

Table 6-1 Error codes

Status Code	Error Code	Error Message	Solution
401	CBS.0000	The user does not have the OBT permission.	Apply for the open beta test permission according to the prompts.
401	CBS.0011	Authentication failed.	Correct the token ID and try again.
401	CBS.0012	Authentication information is missing.	Correct the authentication information and try again.
401	CBS.0013	Failed to obtain the authentication information.	Correct the token ID and try again.
400	CBS.0021	Request parameter error.	Correct the field names in the request parameters and try again.
400	CBS.0022	Incorrect request parameter settings.	Correct the request parameter settings and try again.
500	CBS.9999	Database error.	Service backend error. Please contact technical support.
500	CBS.9998	IAM error.	Service backend error. Please contact technical support.
500	CBS.9997	Lab core error.	Service backend error. Please contact technical support.
400	CBS.1114	The service has not been enabled.	Enable or subscribe to the service according to prompts.
400	CBS.1124	Failed to enable the service.	Check whether the service enabling conditions are met. If the conditions are met, try again.

Status Code	Error Code	Error Message	Solution
500	CBS.1134	Failed to deliver the request.	Service backend error. Please contact technical support.
500	CBS.0031	The internal service is abnormal.	Service backend error. Please contact technical support.
500	CBS.0032	The Elasticsearch resource does not exist.	Service backend error. Please contact technical support.
400	CBS.1214	The dataset resource to be queried does not exist.	Correct the dataset ID and try again.
400	CBS.1611	OBS access failed.	Correct the OBS authentication information and try again.
400	CBS.1612	The OBS resource does not exist.	Ensure that the OBS resource exists and try again.
400	CBS.1613	File format error.	Confirm that the file format meets the requirements and try again.
400	CBS.2114	The Q&A bot to be queried does not exist.	Correct the Q&A bot ID and try again.
400	CBS.2122	Incorrect parameter settings for Q&A bot creation.	Correct the parameter settings for Q&A bot creation and try again.
400	CBS.2125	The number of bots exceeds the upper limit.	Ensure that up to three bots are created and try again.
400	CBS.2145	The knowledge bases, dictionaries, and models related to the lab are not deleted.	Delete the knowledge bases, dictionaries, and models related to the lab and try again.

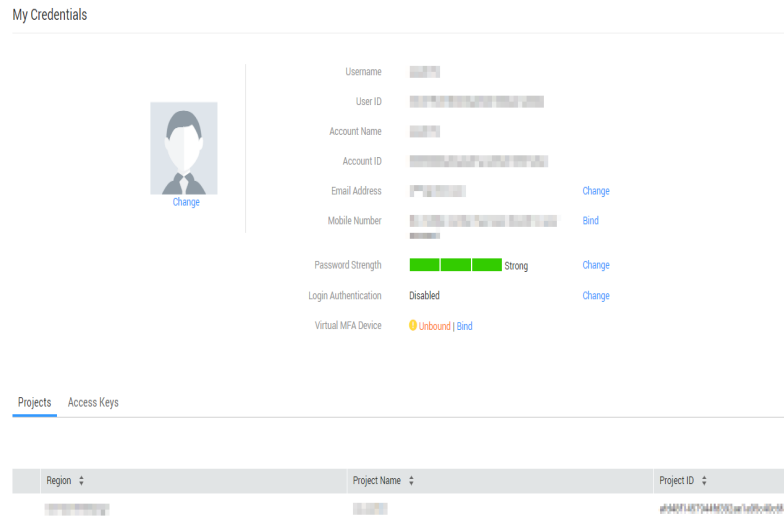| Status Code	Error Code	Error Message	Solution
400	CBS.2154	The Q&A bot to be restarted does not exist.	Correct the Q&A bot ID and try again.
400	CBS.2202	Incorrect parameter settings for knowledge base importing.	Correct the parameter settings for knowledge base importing and try again.
400	CBS.2203	Incorrect format of the file to be imported to the knowledge base.	Correct the file format and try again.
400	CBS.2205	The number of Q&A pairs to be imported to the knowledge base exceeds the upper limit.	Ensure that the number of Q&A pairs to be imported to the knowledge base does not exceed 1 million and try again.
400	CBS.2611	OBS access failed.	Confirm that the account has the permission to access OBS and try again.
400	CBS.2624	The OBS bucket does not exist.	Ensure that the OBS bucket exists and try again.
400	CBS.2641	Incorrect setting for the **path** parameter in the URI.	Correct the **path** parameter setting in the URI and try again.
400	CBS.2312	Incorrect body parameter settings.	Correct the body parameter settings and try again.
400	CBS.2322	Incorrect Q&A request parameters.	Correct the body parameter settings and try again.
400	CBS.2334	The answer to be evaluated does not exist.	Correct the request ID and try again.

Status Code	Error Code	Error Message	Solution
400	CBS.2344	The conversation to be handed off to a human agent does not exist.	Correct the request ID and try again.
400	CBS.2412	Incorrect parameter settings for the text sequence to be checked.	Correct the body parameter settings and try again.
400	CBS.2413	Incorrect format of the text sequence to be checked.	Correct the format of the text sequence and try again.
400	CBS.0001	The user request parameter is incorrect.	Check and modify the request parameters based on the error message.
401	CBS.0002	Authentication failed.	Check whether the token is correct and try again using the correct token.
400	CBS.0003	Failed to find the requested resource.	Check whether the requested resource ID is correct based on the error message.

6.3 Obtaining a Project ID

Obtaining a Project ID from the Console

1. Log in to the **management console**.
2. Move the cursor over your username in the upper right corner and select **My Credentials** from the drop-down list.
3. On the **My Credentials** page, view the username and account name and view projects in the project list.

Figure 6-1 Viewing the project ID

My Credentials

Username		
User ID		
Account Name		
Account ID		
Email Address		Change
Mobile Number		Bind
Password Strength	Strong	Change
Login Authentication	Disabled	Change
Virtual MFA Device	Unbound | Bind	

Projects   Access Keys

Region	Project Name	Project ID
		aHaIdVf148TQ44hf3ll2aer1a98yc40c-bM47

If there are multiple projects, unfold the target region and obtain the project ID from the **Project ID** column.

Obtaining a Project ID by Calling an API

A project ID can also be obtained by calling a specific API. For details, see **Querying Project Information Based on the Specified Criteria**.

The API for obtaining a project ID is **GET https://{Endpoint}/v3/projects**. **{Endpoint}** indicates the endpoint of IAM, which can be obtained from **Regions and Endpoints**. For details about API authentication, see **Authentication**.

The following is an example response. For example, if Face Recognition is deployed in the **ap-southeast-1** region, the value of **name** in the response body is **ap-southeast-1**. The value of **id** in **projects** is the project ID.

```
{
    "projects": [
        {
            "domain_id": "65382450e8f64ac0870cd180d14e684b",
            "is_domain": false,
            "parent_id": "65382450e8f64ac0870cd180d14e684b",
            "name": "project_name",
            "description": "",
            "links": {
                "next": null,
                "previous": null,
                "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
            },
            "id": "a4a5d4098fb4474fa22cd05f897d6b99",
            "enabled": true
        }
    ],
    "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects"
    }
}
```

6.4 Obtaining the Account ID

An account ID (domain-id) is required for some URLs when an API is called. To obtain an account ID, perform the following operations:

1. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list.

   On the **My Credentials** page, view the **Account ID**.
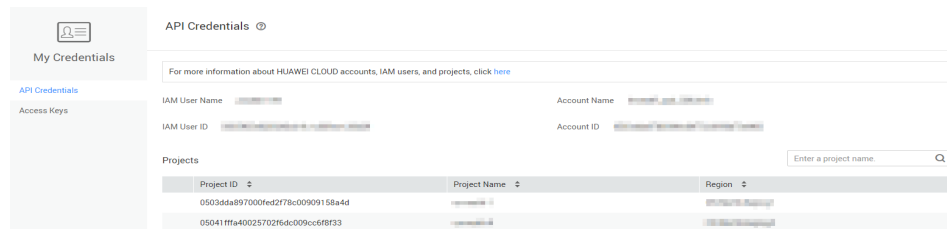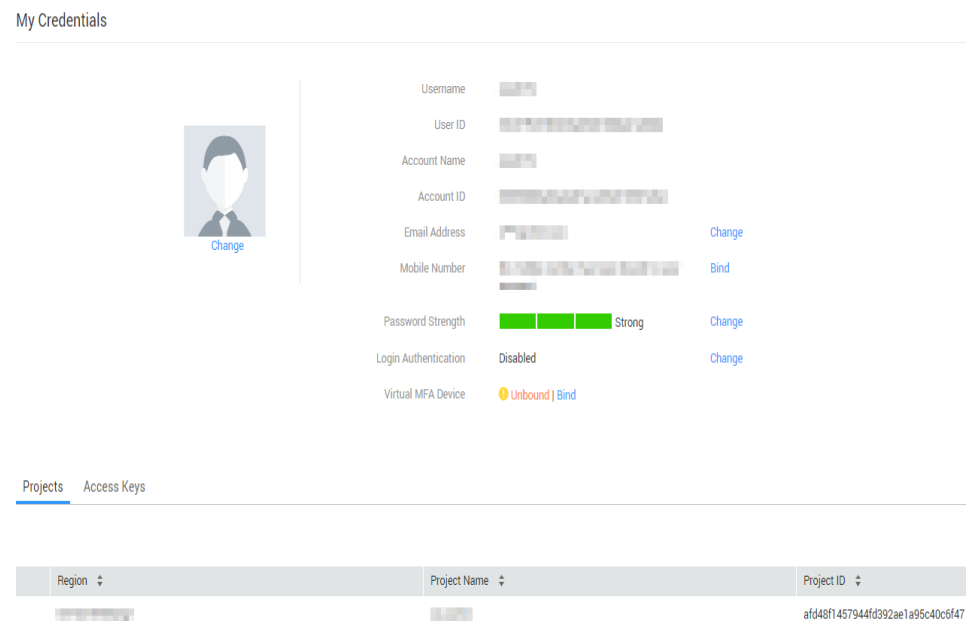
Figure 6-2 Viewing the account ID

Figure 6-3 Viewing the account ID

7 Change History

Released On	What's New
2019-07-11	This is the first official release.