API Gateway

Getting Started

Issue 01

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Contents

1 Introduction 1
2 Viewing Demo 2
3 Opening APIs 5
3.1 Process Flow 5
3.2 Creating an API Group 6
3.3 Binding a Domain Name 7
3.4 Creating an API 7
3.5 Debugging an API 11
3.6 (Optional) Creating an Environment 12
3.7 Publishing an API 13
4 Calling APIs 14
4.1 Process Flow 14
4.2 Creating an App and Getting Authorized 15
4.3 Adding an AppCode for Simple Authentication 16
4.4 Calling an API 16

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1 Introduction

API Gateway is a fully managed service that enables you to securely build, manage, and deploy APIs at any scale with high performance and availability. With API Gateway, you can easily integrate your internal service systems and selectively expose your service capabilities.

To experience exposing and calling an API, see **Viewing Demo**.

To learn about the process of exposing and calling an API, see **Opening APIs** and **Calling APIs**. **Simple authentication** with an app is used for illustration.

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2 Viewing Demo

Scenario

The API Gateway console features a demo that shows how you can create and publish an HTTP Echo service API and bind a request throttling policy to it in the shared gateway. You can then debug and call the API.

When the HTTP Echo service API is called using the GET method, the backend service returns a response containing the request information.

NOTE

- If you have already used the demo to create an API and API group and you want to view the demo again, delete the API and API group and click the **Demo** button.
- A request throttling policy will be created during the demo. You can delete it if you do not require it.
- This section describes how to view the demo. To view the demo, enable outbound access on the **Basic Information** page of the gateway. The demo is unavailable in **CN-Hong Kong**, **CN North-Ulanqab201**, **CN South-Guangzhou-InvitationOnly**, and other regions outside China.

Procedure

Step 1 Log in to the management console.

Step 2 Click  in the upper left corner and select a region.

Step 3 Click  in the upper left corner and choose **API Gateway**.

Step 4 Click **View Demo**.

During the demo, the system automatically performs the following operations:

- Creates an API group.
- Creates a function.
- Creates a function trigger.
- Creates an API and adds it to the API group.
- Publishes the API in the RELEASE environment.

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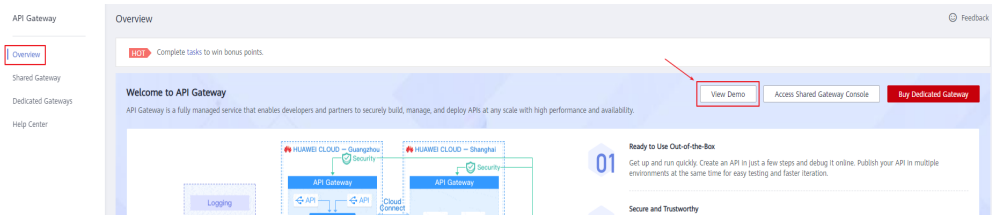
- Creates a request throttling policy and binds it to the API.

Figure 2-1 Demo



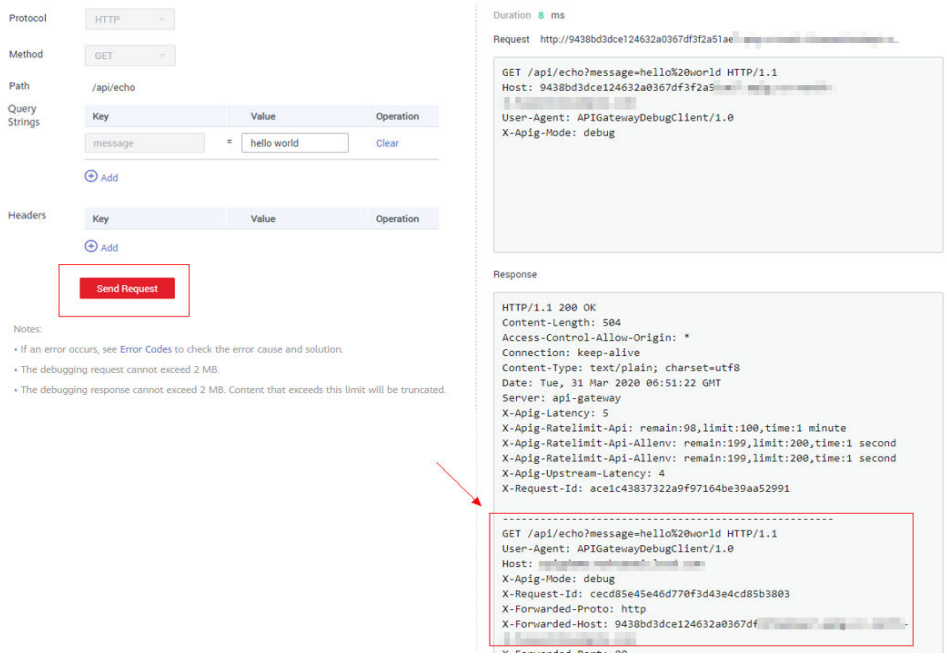
Step 5 Click **Next**.

Step 6 Set query strings and headers, and click **Send Request**.

In this demo, the query strings and headers are only used for illustration purposes.

- If the request is sent successfully, the status code **200** and the request and response details are displayed.
- If the debugging fails, an HTTP status code **4xx** or **5xx** is displayed. For details, see **Error Codes**.

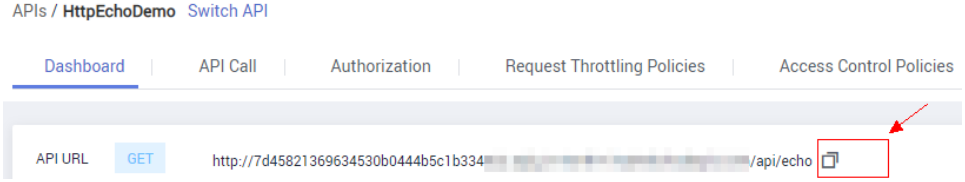
Figure 2-2 Debugging the API



Step 7 Call the API.

1. Choose **API Publishing** > **APIs**, and click **HttpEchoDemo**.
2. On the **Dashboard** tab page, click to copy the URL.

Figure 2-3 API details page



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3. Paste the URL into the address bar of your browser to view the results.
   The API request details received by the backend demo service are displayed.

   Figure 2-4 Results



----End

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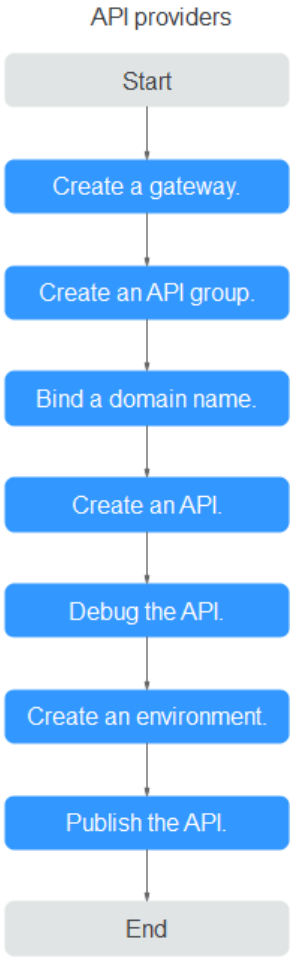
3 Opening APIs

3.1 Process Flow

The following figure shows the process of exposing an API.



1. Creating a Gateway

   Buy a dedicated gateway. Alternatively, **use the shared gateway**.

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2. **Creating an API Group**

   An API group facilitates management of APIs used for the same service. Create an API group and then create APIs.

3. **Binding a Domain Name**

   Before making the API available for users to access, bind an independent domain name (custom domain name) to the group to which the API belongs. Then API callers can use these domain names to call the API.

4. **Creating an API**

   When creating an API, configure the frontend and backend request paths, parameters, and protocols.

5. **Debugging an API**

   Debug the API to check whether it works normally.

6. **(Optional) Creating an Environment**

   An API can be called in different scenarios, such as the production environment (RELEASE) or other custom environments. RELEASE is the default environment defined in API Gateway.

7. **Publishing an API**

   Publish the API so that it can be called.

8. (Optional) Listing the API on the Marketplace

   If you want to sell the API through the Marketplace, see **How Do I List APIs on HUAWEI CLOUD Marketplace for Sale?**

3.2 Creating an API Group

Step 1 Log in to the API Gateway console.

Step 2 Access the **shared gateway** or the **dedicated gateway you purchased**.

Step 3 In the navigation pane, choose **API Publishing** > **API Groups**.

Step 4 Click **Create API Group** and configure the group information.

Figure 3-1 Configuring API group information

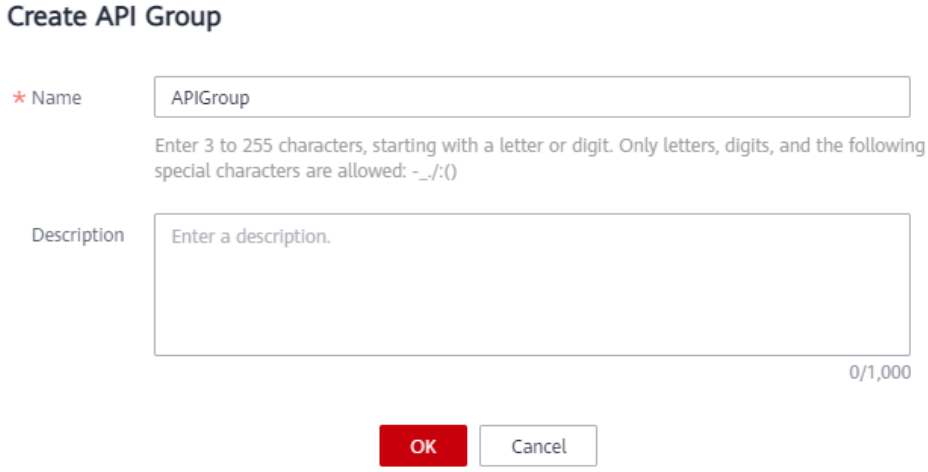

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Table 3-1 API group information

Parameter	Description
Name	API group name. It is recommended that you enter a name based on naming rules to facilitate search.
Description	Description of the API group.

Step 5 Click **OK**. The system automatically allocates a subdomain name to the API group. APIs in the group can be debugged using the subdomain name.

----End

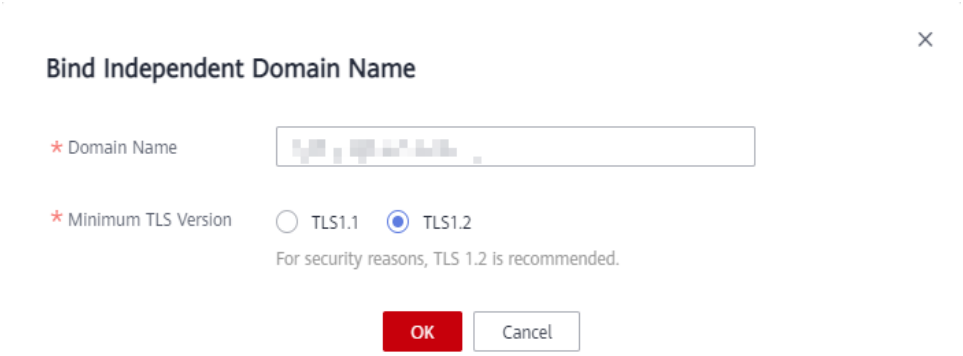
3.3 Binding a Domain Name

Step 1 On the **API Groups** page, click the group created in **Creating an API Group** to go to the group details page.

Step 2 Click the **Domain Names** tab.

Step 3 Click and enter a domain name.

Figure 3-2 Binding an independent domain name



NOTE

The independent domain name must have been registered and CNAMEd to the subdomain name of the API group. For details, see **Adding a CNAME Record Set**.

Step 4 Click **OK**.

----End

3.4 Creating an API

Create an API with the following steps:

1. **Setting Basic Information**
2. **Defining API Request**

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3. **Defining Backend Service**
4. **Defining Responses**

Setting Basic Information

Step 1 In the navigation pane, choose **API Publishing** > **APIs**.

Step 2 Click **Create API** and set the basic information.

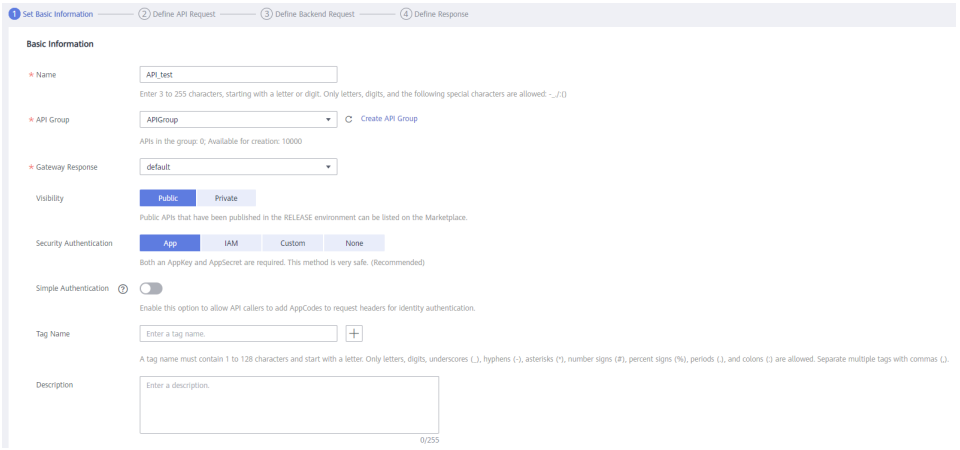

Table 3-2 Setting basic information

Parameter	Description
Name	API name. It is recommended that you enter a name based on naming rules to facilitate search.
API Group	By default, the group created in **Creating an API Group** is selected.
Gateway Response	Select a response to be displayed if API Gateway fails to process an API request. The default gateway response is **default**.
Visibility	By default, **Public** is selected.
Security Authentication	API authentication mode. Set this parameter to **App**.
Simple Authentication	If you enable this option, API Gateway verifies only the AppCode and the request signature does not need to be verified. For this example, enable simple authentication.
Tag Name	Classification attribute used to quickly identify the API from other APIs.
Description	Description of the API.

Step 3 Click **Next**.

----End

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Defining API Request

Step 1 On the **Define API Request** page, set the request information.

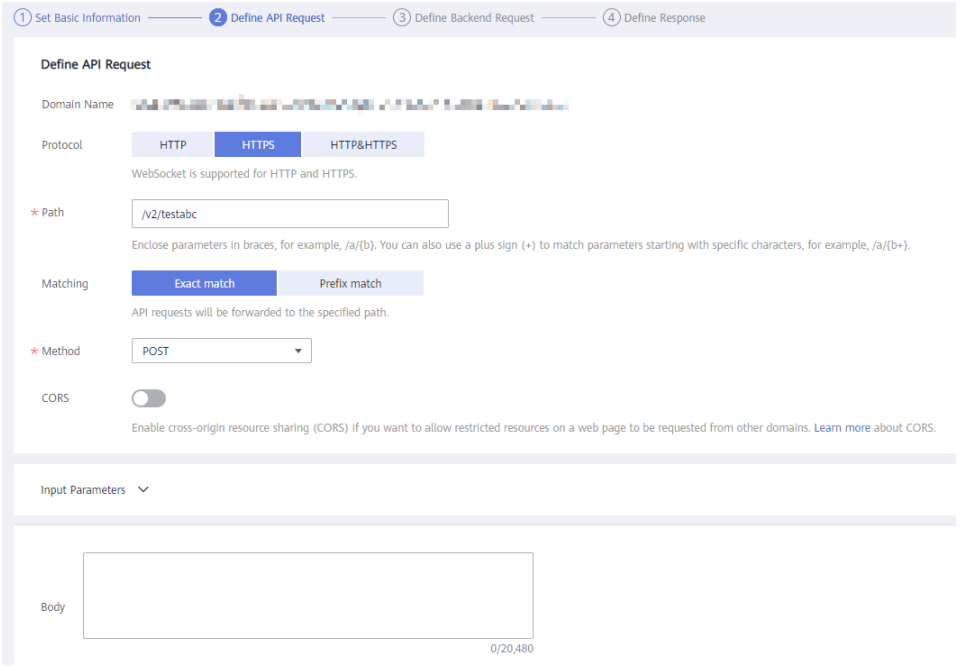

Table 3-3 Parameters for defining API requests

Parameter	Description
Domain Name	The subdomain automatically allocated to the API group created in **Creating an API Group**.
Protocol	Request protocol of the API. Set this parameter to **HTTPS**.
Path	The path for requesting the API.
Matching	By default, **Exact match** is selected.
Method	Request method of the API. Set this parameter to **POST**.
CORS	For this example, disable this option.

Step 2 Click **Next**.

----End

Defining Backend Service

Step 1 On the **Define Backend Request** page, set the backend service information.

Step 2 Select a backend service type. For this example, select **HTTP/HTTPS**.

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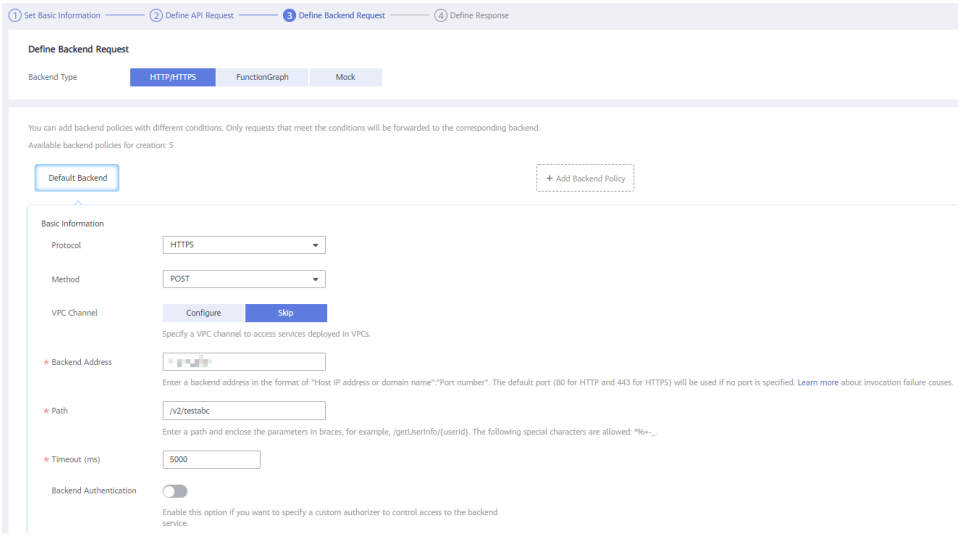

Table 3-4 Parameters for defining an HTTP/HTTPS backend service

Parameter	Description
Protocol	Set this parameter to **HTTP**.
Method	Request method of the API. Set this parameter to **POST**.
VPC Channel	Determine whether the backend service will be accessed using a VPC channel. For this example, select **Skip**.
Backend Address	Address of the backend service.
Path	Path of the backend service.
Timeout	Backend service request timeout. Default value: 5000 ms.
Backend Authentication	Determine whether your backend service needs to authenticate API requests. For this example, disable this option.

Step 3 Click **Next**.

----End

Defining Responses

Step 1 On the **Define Response** page, set the responses.

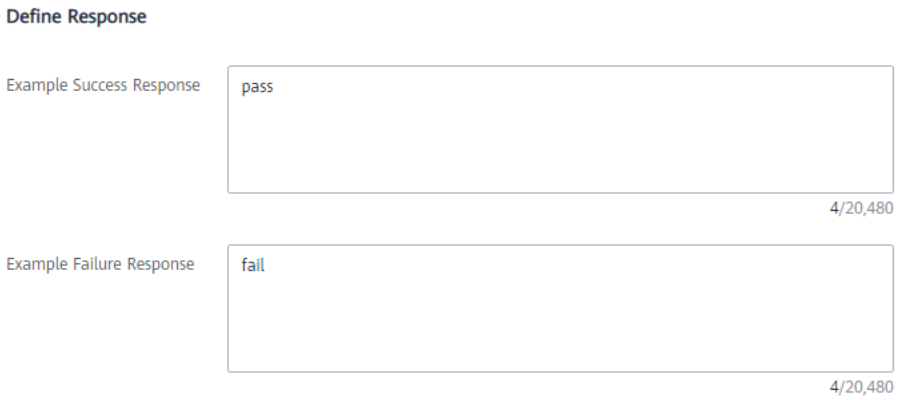

Table 3-5 Defining responses

Parameter	Description
Example Success Response	An example of a response returned when the API is called successfully.
Example Failure Response	An example of a response returned when the API fails to be called.

Step 2 Click **Finish**.

----End

3.5 Debugging an API

Step 1 On the **APIs** page, locate the API created in **Creating an API**, and choose **More** > **Debug**.

Step 2 On the left side, set the API request parameters listed in **Table 3-6**. On the right side, view the API request and response information after you click **Send Request**.

Table 3-6 Parameters for debugging an API

Parameter	Description
Protocol	This parameter can be modified only if you set **Protocol** to **HTTP&HTTPS** for the API.
Method	This parameter can be modified only if you set **Method** to **ANY** for the API.
Path	Request path of the API.
Query Strings	Query string parameters and values.
Headers	HTTP headers and values.
Body	This parameter can be modified only if you set **Method** to **PATCH**, **POST**, or **PUT** for the API.

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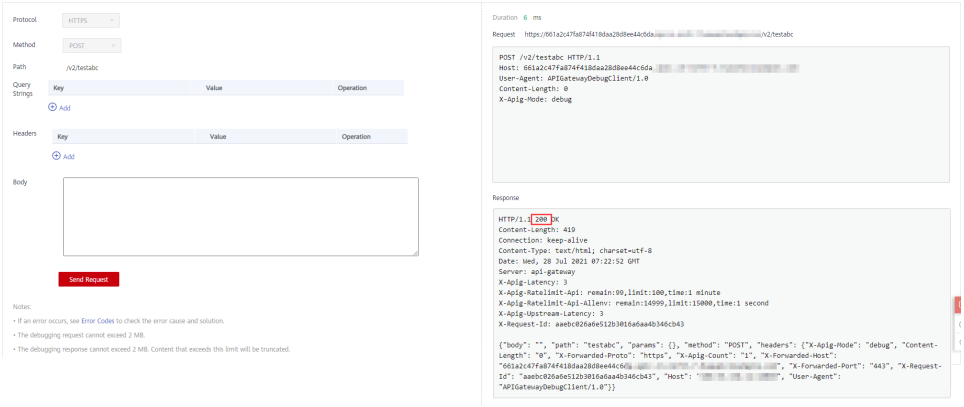
Step 3 Click **Send Request**.

If the API is called successfully, the status code **200** is displayed.



----End

3.6 (Optional) Creating an Environment

Step 1 In the navigation pane, choose **API Publishing** > **Environments**.

Step 2 Click **Create Environment** and set the environment information.

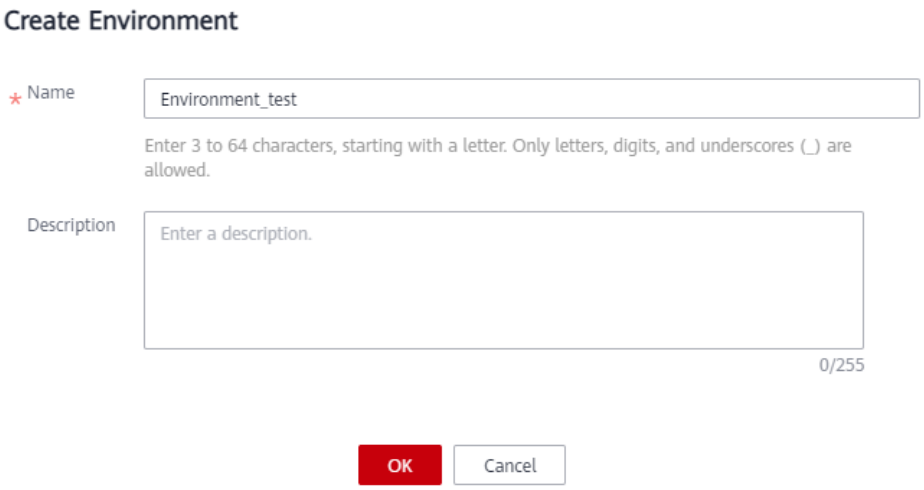


Table 3-7 Environment information

Parameter	Description
Name	Environment name. It is recommended that you enter a name based on naming rules to facilitate search.
Description	Description of the environment.

Step 3 Click **OK**.

----End

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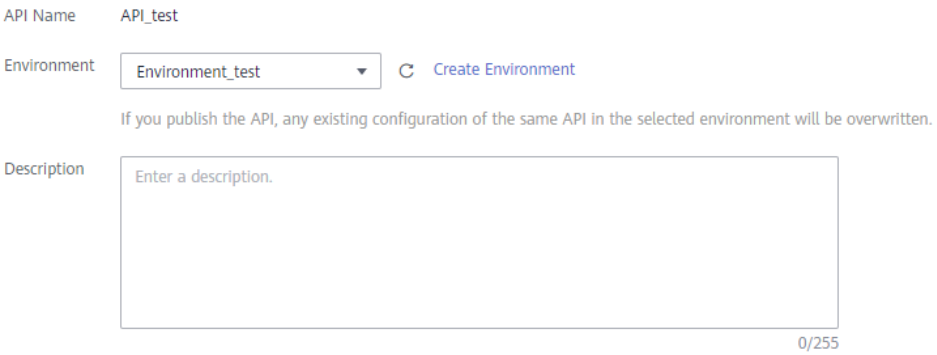
3.7 Publishing an API

Step 1 In the navigation pane, choose **API Publishing** > **APIs**.

Step 2 Locate the API created in **Creating an API**, and click **Publish**.

Step 3 Select the environment where the API will be published.



Step 4 Click **Publish**.

----End

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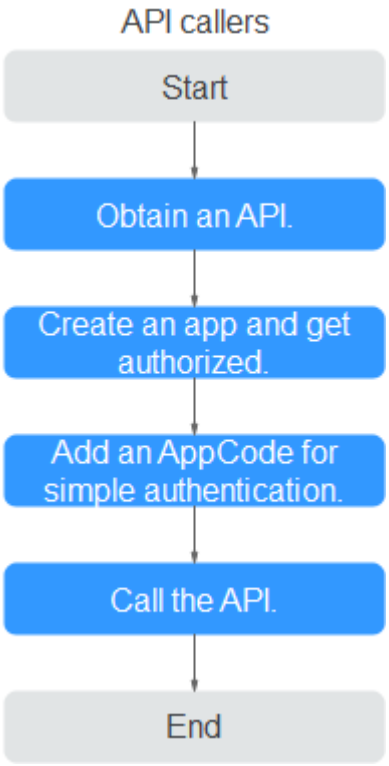
4 Calling APIs

4.1 Process Flow

The following figure shows the process of calling an API.



1. Obtaining an API

   Obtain an API and its documentation from an API provider.

2. **Creating an App and Getting Authorized**

   APIs that use app authentication can only be called using apps bound to them.

3. **Adding an AppCode for Simple Authentication**

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API Gateway only verifies the AppCode during simple authentication.

4. **Calling the API**

   Use an API test tool to call the API with app authentication credentials.

4.2 Creating an App and Getting Authorized

Creating an App

Step 1 In the navigation pane, choose **API Calling** > **Apps**.

Step 2 Click **Create App** and set basic app information.

Table 4-1 App information

Parameter	Description
Name	App name. It is recommended that you enter a name based on naming rules to facilitate search.
Description	Description of the app.

Step 3 Click **OK**.

Step 4 Click the app, and view the AppKey and AppSecret on the app details page.

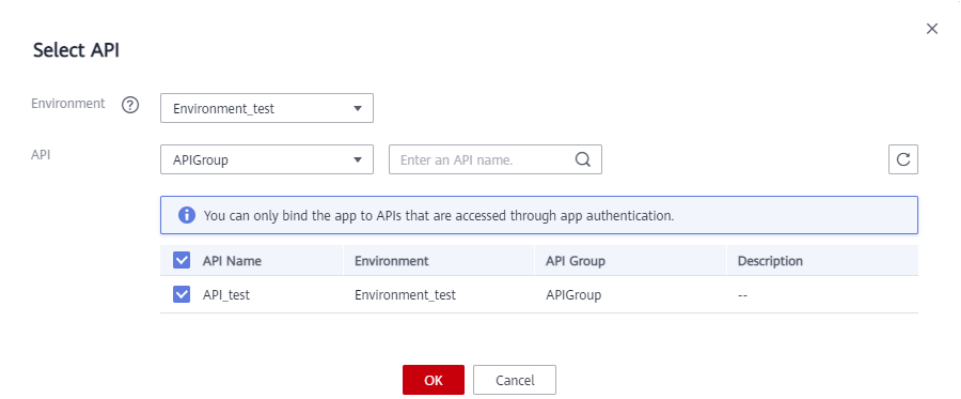


----End

Binding an App to an API

Step 1 At the top of the API list, click **Select API**.

Step 2 Select the environment, API group, and API created in **Opening APIs**, and click **OK**.



----End

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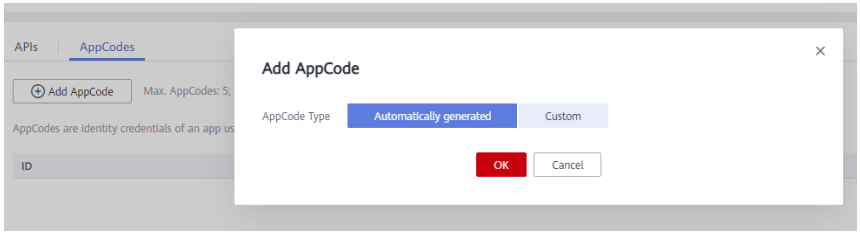
4.3 Adding an AppCode for Simple Authentication

Step 1 In the app list, click the app created in **Creating an App and Getting Authorized** to go to the app details page.

Step 2 Click the **AppCodes** tab.

Step 3 Click **Add AppCode**.

Step 4 Select **Automatically generated**.



Step 5 Click **OK**.

----End

4.4 Calling an API

Use an API test tool to configure the API calling information.

Step 1 Obtain the API request information.

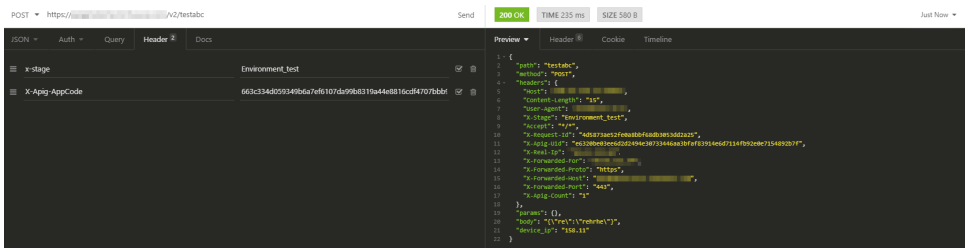
For illustration purposes, an API and its documentation are obtained through offline channels. You can also obtain the authentication mode, request method, request path, and other information about the API.

Step 2 Add the header parameter **X-Apig-AppCode** and set the parameter value to the **generated AppCode**.

Step 3 Add the header parameter **x-stage** and set the parameter value to the **running environment**. Skip this step if the API has been published in the RELEASE environment.

Step 4 Click **Send** to send a request.

If the API is called successfully, the message **200 OK** is displayed.



----End

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