

API Gateway

Getting Started

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1 Introduction

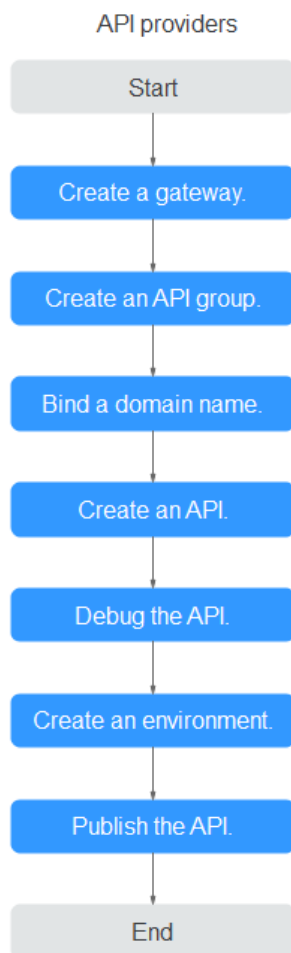
API Gateway (APIG) is a fully managed service that enables you to securely build, manage, and deploy APIs at any scale with high performance and availability. With APIG, you can easily integrate your internal service systems and selectively expose your service capabilities.

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.

2 Opening APIs

2.1 Process Flow

The following figure shows the process of exposing an API.



1. Creating a Gateway

Create a dedicated gateway.

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 APIG.
7. **Publishing an API**
Publish the API so that it can be called.

2.2 Creating an API Group

Step 1 Log in to the APIG console.

Step 2 Access the **dedicated gateway you created**.

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

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

Figure 2-1 Configuring API group information

Create API Group

* Name

Enter 3 to 255 characters, starting with a letter or digit. Only letters, digits, and the following special characters are allowed: -_/:()

Description

0/1,000

Table 2-1 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 domain name.

----End

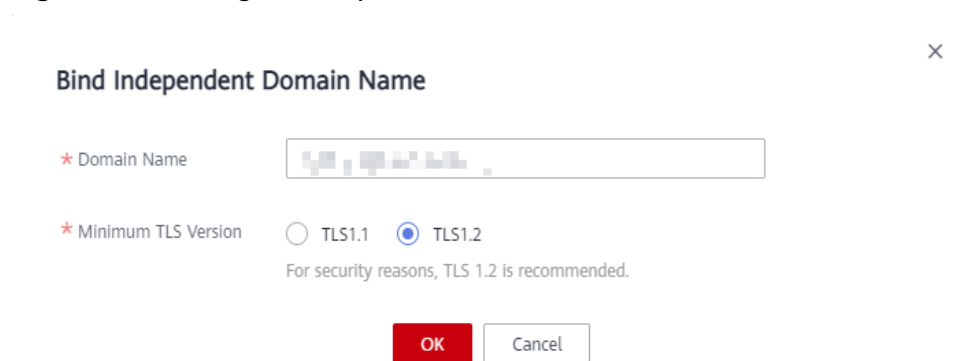
2.3 Binding a Domain Name

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 **Bind Independent Domain Name**.

Figure 2-2 Binding an independent domain name



NOTE

The independent domain name must be registered and resolved. For details, see "Prerequisites" in section "Binding a Domain Name" of the *API Gateway User Guide*.

----End

2.4 Creating an API

Create an API with the following steps:

1. [Setting Basic Information](#)
2. [Defining API Request](#)
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.

The screenshot shows the 'Set Basic Information' configuration page for an API. The page is divided into four steps: 1. Set Basic Information, 2. Define API Request, 3. Define Backend Request, and 4. Define Response. The 'Set Basic Information' step is active. The form includes the following fields and options:

- Name:** A text input field containing 'API_Test'. Below it, a note states: 'Enter 3 to 255 characters, starting with a letter or digit. Only letters, digits, and the following special characters are allowed: -./()'. A character count '0/255' is shown at the bottom right of the field.
- API Group:** A dropdown menu showing 'APIGroup' and a 'Create API Group' link. Below it, a note states: 'APIs in the group: 0; Available for creation: 10000'.
- Gateway Response:** A dropdown menu showing 'default'.
- Visibility:** Two radio buttons, 'Public' (selected) and 'Private'. Below it, a note states: 'Public APIs that have been published in the RELEASE environment can be listed on the Marketplace.'
- Security Authentication:** Four radio buttons: 'App' (selected), 'IAM', 'Custom', and 'None'. Below it, a note states: 'Both an AppKey and AppSecret are required. This method is very safe. (Recommended)'.
- Simple Authentication:** A toggle switch that is currently turned off. Below it, a note states: 'Enable this option to allow API callers to add AppCodes to request headers for identity authentication.'
- Tag Name:** A text input field with a '+' icon to the right. Below it, a note states: 'A tag name must contain 1 to 128 characters and start with a letter. Only letters, digits, underscores (_), hyphens (-), asterisks (*), number signs (#), percent signs (%), periods (.), and colons (:) are allowed. Separate multiple tags with commas (,).'.
- Description:** A large text area for entering a description. A character count '0/255' is shown at the bottom right of the field.

Table 2-2 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 APIG 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, APIG verifies only the AppCode and the request signature does not need to be verified. For this example, enable simple authentication.

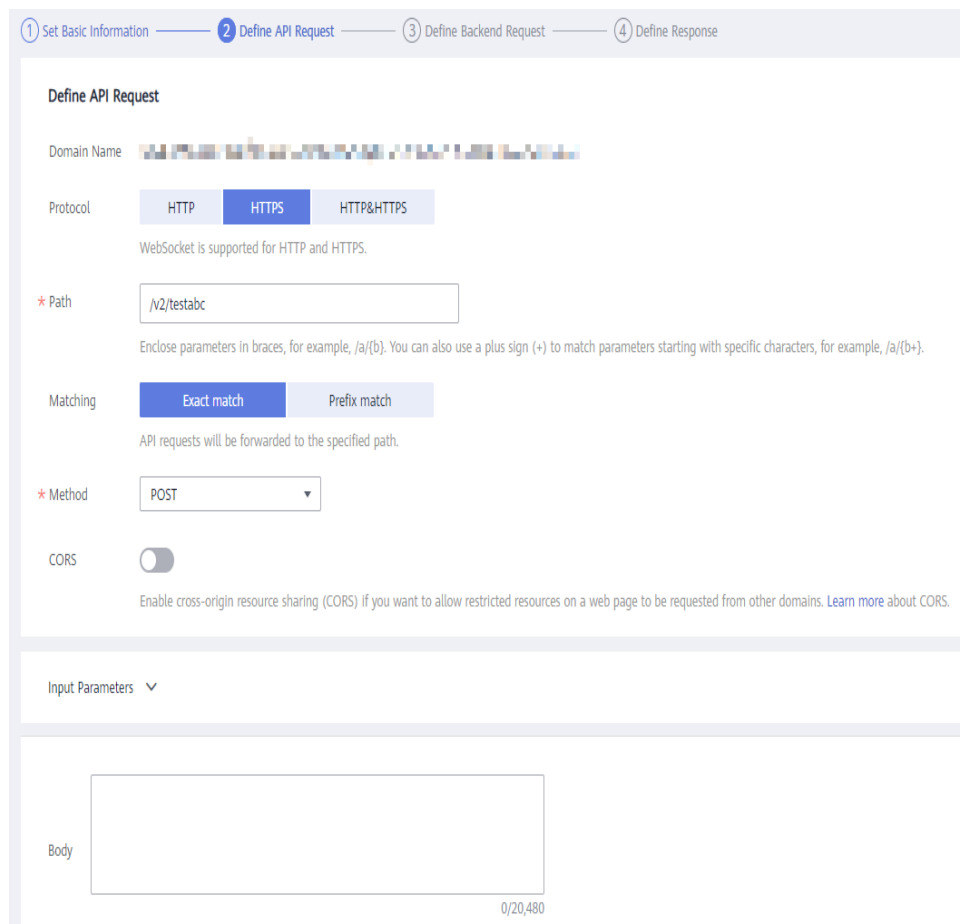
Parameter	Description
Tag Name	Classification attribute used to quickly identify the API from other APIs.
Description	Description of the API.

Step 3 Click **Next**.

----End

Defining API Request

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



The screenshot displays the 'Define API Request' configuration interface. At the top, a progress bar indicates the current step is '2 Define API Request'. The main configuration area includes:

- Domain Name:** A text input field with a blurred placeholder.
- Protocol:** Radio buttons for HTTP, HTTPS (selected), and HTTP&HTTPS. A note states: 'WebSocket is supported for HTTP and HTTPS.'
- Path:** A text input field containing '/v2/testabc'. A note explains: 'Enclose parameters in braces, for example, /a/{b}. You can also use a plus sign (+) to match parameters starting with specific characters, for example, /a/{b+}.'
- Matching:** Radio buttons for Exact match (selected) and Prefix match. A note states: 'API requests will be forwarded to the specified path.'
- Method:** A dropdown menu set to POST.
- CORS:** A toggle switch that is currently turned off. A note explains: 'Enable cross-origin resource sharing (CORS) if you want to allow restricted resources on a web page to be requested from other domains. [Learn more about CORS.](#)'
- Input Parameters:** A section with a downward arrow icon.
- Body:** A large text area for defining the request body, with a character count of 0/20,480.

Table 2-3 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 .

Parameter	Description
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**.

Table 2-4 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.

Step 3 Click **Next**.

----End

Defining Responses

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

Define Response

Example Success Response

pass

4/20,480

Example Failure Response

fail

4/20,480

Table 2-5 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

2.5 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 2-6](#). On the right side, view the API request and response information after you click **Send Request**.

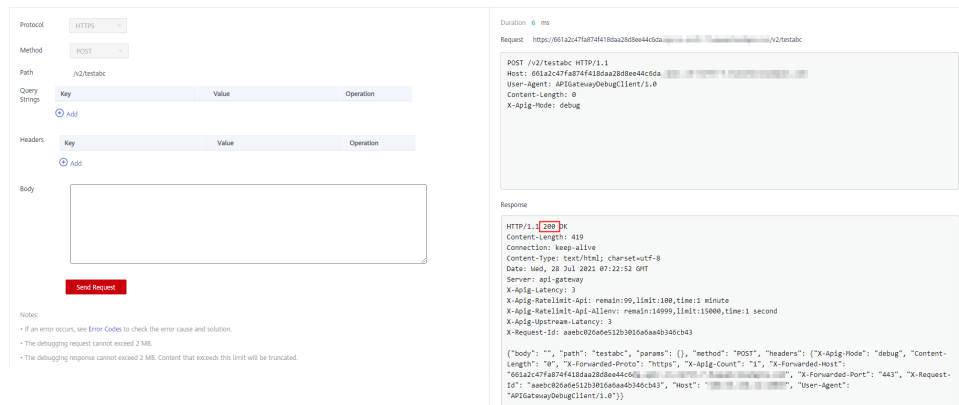
Table 2-6 Parameters for debugging an API

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.

Parameter	Description
Body	This parameter can be modified only if you set Method to PATCH , POST , or PUT for the API.

Step 3 Click Send Request.

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



----End

2.6 (Optional) Creating an Environment

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

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

Create Environment

Name

Enter 3 to 64 characters, starting with a letter. Only letters, digits, and underscores (_) are allowed.

Description

0/255

Table 2-7 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


2.7 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.

API Name API_test

Environment Environment_test  Create Environment

If you publish the API, any existing configuration of the same API in the selected environment will be overwritten.

Description

0/255

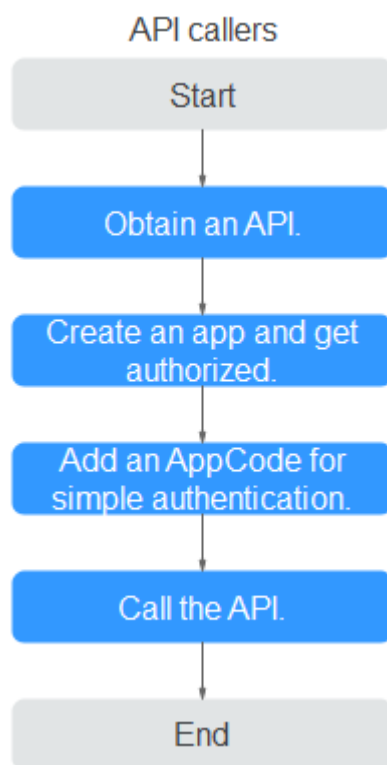
Step 4 Click **Publish**.

----End

3 Calling APIs

3.1 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**

APIG only verifies the AppCode during simple authentication.

4. **Calling the API**

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

3.2 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 3-1 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**.

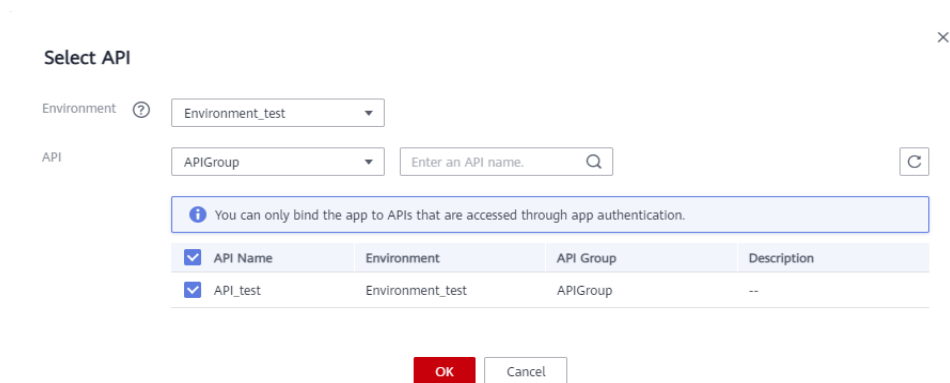
----End

Binding an App to an API

Step 1 In the **Operation** column of the created app, click **Bind to API**, and then click **Select API**.

Step 2 At the top of the API list, click **Select API**.

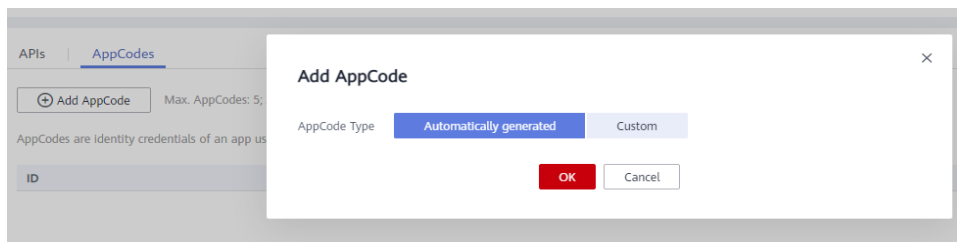
Step 3 Select the environment, API group, and API created in **Opening APIs**, and click **OK**.



----End

3.3 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**.



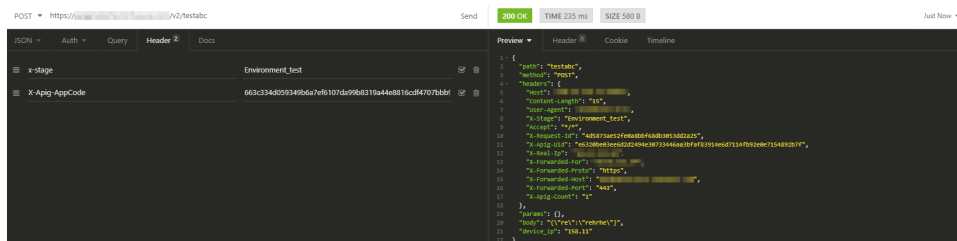
- Step 5** Click **OK**.
- End

3.4 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