

API Gateway

FAQ

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How to obtain the error message

If the API request reaches the gateway, the gateway returns the request result message.

Check the request header in the returned result. Results starting with X-Ca are all returned from the gateway. The important message contained in the result includes:

X-Ca-Request-Id: 7AD052CB-EE8B-4DFD-BBAF-EFB340E0A5AF

//The unique ID of the request. Once the request reaches the API gateway, the API gateway generates a request ID and returns it to the client through the response header. We recommend that you record the request ID in both the client and backend services for troubleshooting and tracing.

X-Ca-Error-Message: Invalid Url

//An error message returned from the API Gateway. When a request fails, the API Gateway returns the error message to the client through the response header.

X-Ca-Debug-Info: {"ServiceLatency":0,"TotalLatency":2}

//A debug message returned when the debug mode is enabled. The message can be changed later and is used only for reference at the debugging stage.

The header in X-Ca-Error-Message essentially clarifies the error cause. The X-Ca-Request-Id can be provided to technical support engineers for log searching.

Empty return value

The returned result of an HTTP/HTTPS request consists of the HTTPCode, Header, and Body. When a request fails, the returned Body may be empty because the request does not enter the business logic. The error "The return value is empty." is returned. However, the important portion of the message is contained in the Header.

If an API request initiated by a user reaches the gateway, the gateway returns the result message indicating a request success or failure.

The majority of the returned messages are contained in the Header. Messages starting with X-Ca are returned from the gateway. Important messages include:

X-Ca-Request-Id: 7AD052CB-EE8B-4DFD-BBAF-EFB340E0A5AF

//The unique ID of the request. Once the request reaches the API gateway, the API gateway generates a request ID and returns it to the client through the response header. We recommend that you record the request ID in both the client and backend services for troubleshooting and tracing.

X-Ca-Error-Message: Invalid Url

//An error message returned from the API Gateway. When a request fails, the API Gateway returns the error message to the client through the response header.

X-Ca-Debug-Info: {"ServiceLatency":0,"TotalLatency":2}

//A debug message returned when the debug mode is enabled. The message can be changed later and is used only for reference at the debugging stage.

Therefore, if the returned message of a request is empty, check the returned Header. In normal cases, the Body is empty when the request reaches the gateway and an error is returned stating "The return value is empty." However, the important portion of the message is contained in the Header.

If the Header is also empty, the request did not reach the gateway. Check your network conditions.

You can search for methods to obtain and view the HTTP/HTTPS request headers in different languages.

HTTPS certificate error

Error message

The certificate authentication error or certificate expiration prompt is returned during an HTTPS interface call.

Cause and solution

1. Invalid certificate

The certificate of the API provider is issued by a non-mainstream organization, however, it can be used for browser access because the browser automatically updates the root certificate. However, the root certificate for an operating system of an earlier version does not trust the certificate issuance organizations, or the trust has expired.

Solution

1. Update the client root certificate. For example, for Java+Linux, update the OpenSSL client. For other operating systems and programming languages, update the root certificate used by HTTPS in the programming language.
2. Contact the API provider to change to a mainstream SSL certificate with better compatibility.
3. The SSL certificate validity check is omitted in the program. However, this configuration is not recommended because the request may be hijacked. The method can only be used when the API provider cannot provide a mainstream SSL certificate with better compatibility and the security risk is controllable.

2. Invalid SSL certificate of the API provider

The SSL certificate of the API provider expires.

Solution

1. Contact the API provider to change the SSL certificate.
2. The SSL certificate validity check is omitted in the program. However, this configuration is not recommended because the request may be hijacked. The method can only be used when the API provider cannot provide a mainstream SSL certificate with better compatibility and the security risk is controllable.

Error code table

When you call an API that you or another person activates through API Gateway, such as weather query, IP query or image recognition API, the following error codes may be returned.

Server error code table. When the error code of HttpStatusCode is 5xx, it indicates that the service is unavailable. In this case, you must try again or contact the API service provider on the product page.

Error code	HTTP status code	Meaning	Solution
Internal Error	500	API Gateway has an internal error.	Try again.
Failed To Call Backend Service	500	The underlying service has an error.	An error occurred in the underlying API

			service. Try again and contact the API service provider for a solution if the problem persists after several retries.
Service Unavailable	503	Service is unavailable.	Try again later.
Async Service	504	The backend service times out.	Try again later.

Client error code table. When the error code of HttpStatusCode is 4xx, it indicates that the service has an error. It is generally because the parameter, signature, or request method is incorrect or the service is under throttling. You must check the error code carefully and solve the problem accordingly.

Error code	HTTP status code	Meaning	Solution
Throttled by USER Throttling	403	The operation is throttled by user throttling policies.	Generally, the operation is throttled by the throttling policies due to the user throttling value set by the API service provider. You can contact the API service provider for a higher user throttling value.
Throttled by App Throttling	403	The operation is throttled by application throttling policies.	Generally, the operation is throttled by the throttling policies due to the application throttling value set by the API service provider. You can contact the API service provider for a higher user throttling value.
Throttled by API Throttling	403	The operation is throttled by API throttling policies.	Generally, the operation is throttled by the throttling policies due to the API throttling value set by the API service provider. You can contact the API service provider for

			a higher user throttling value.
Throttled by DOMAIN Throttling	403	The operation is throttled by throttling on the second-level domain name.Or, the operation is throttled by group throttling policies.	The second-level domain name used for API calls can be accessed up to 1,000 times each day.Each group has limited 500 QPSs.
Quota Exhausted	403	The call quota is exhausted.	The call quota you have bought is exhausted.
Quota Expired	403	The quota you have bought expires.	The quota you have bought expires.
Outstanding Payment	403	The account is in outstanding payment.	Recharge your account as soon as possible.
Empty Request Body	400	The body is empty.	Check the content of the request body.
Invalid Request Body	400	The body is invalid.	Check the content of the request body.
Invalid Param Location	400	The parameter location is incorrect.	The location of the request parameter is incorrect.
Unsupported Multipart	400	Upload is not supported.	The file upload is not supported.
Invalid URL	400	URL is invalid.	The requested method, path, or environment is incorrect. For more information, see Invalid URL for error description.
Invalid Domain	400	The domain name is invalid.	The request' s domain name is invalid and API cannot be found based on the domain name. Contact the API service provider.
Invalid HttpMethod	400	The HttpMethod is invalid.	The HttpMethod is entered incorrectly.
Invalid AppKey	400	AppKey is invalid or does not exist.	Check the input AppKey and keep no spaces at either side of the parameter.

Invalid AppSecret	400	AppSecret is incorrect.	Check the input AppSecret and keep no spaces at either side of the parameter.
Timestamp Expired	400	The timestamp expires.	Check whether the request system time is a standard time.
Invalid Timestamp	400	The timestamp is invalid.	For more information, see Request signature instructions .
Empty Signature	401	The signature is empty.	See Request signature instructions for how to input the signature string.
Invalid Signature, Server StringToSign:%s	400	The signature is invalid.	See Invalid signature for signature invalidity errors .
Invalid Content-MD5	400	The Content-MD5 value is invalid.	The request body is empty but its MD5 value is input or is calculated incorrectly. For more information, see Request signature instructions .
Unauthorized	403	The operation is unauthorized.	The application has no permission to call the API. See Unauthorized for error instructions .
Nonce Used	400	The SignatureNonce is used.	The SignatureNonce cannot be reused.
API Not Found	400	API is not found.	The input GroupID, Stage, or other parameters are incorrect or the API is deprecated.

When you call a control OpenAPI, such as CreateAPI, ModifyAPI, or DeleteAPI, that is opened through the API Gateway, the following error codes may be returned.

Server error code table. When the error code of HttpStatusCode is 5xx, it indicates that the service is unavailable. Try again.

Error code	Description	HTTP status code	Meaning	Solution
ServiceUnavailable	The request has failed due to a temporary failure of the server.	503	Service is unavailable.	Try again.
InternalServerError	The request processing has failed due to some unknown error, exception, or failure.	500	An internal error occurs.	Try again.

Client error code table. When the error code of HttpStatusCode is 4xx, it indicates that the service has an error. Generally, it is caused by incorrect parameter or service logic or permission restriction. Check the error code carefully and solve the problem accordingly.

Error code	Description	HTTP status code	Meaning	Solution
Repeated%s	The specified %s is repeated.	400	A parameter is repeated. %s is a placeholder and a specific parameter name or prompts are provided when you call an API.	Follow the prompts to modify the repeated parameter and try again.
RepeatedCommit	Resubmit request.	400	The request is repeated.	Do not submit the request frequently.
Missing%s	The %s is required for this action.	400	The parameter %s is missing.	Enter the missing parameter according to the error and try the request again.
MissingAppIdOrAppOwner	AppId or AppOwner must have a valid value.	400	AppID or AppOwner is missing.	AppID and AppOwner cannot both be empty.
Invalid%s	The specified parameter %s value is not valid.	400	The parameter is invalid.	Follow the prompts to enter the specific parameter, view restrictions on parameters,

				and try again.
NotFound%s	Cannot find resource according to your specified %s.	400	The resource is not found.	The resource cannot be found based on the specified parameter %s. Check whether %s is correct.
InvalidFormat%s	The specified parameter %s value is not well formatted.	400	Parameter format is incorrect.	Follow the prompts to check and modify the format of %s and try again.
Duplicate%s	The specified parameter %s value is duplicate.	400	The parameter is repeated.	Duplicate request parameters are not allowed. Check and modify the parameter and try again.
DependencyViolation%s	The specified %s has %s definitions.	400	The parameter dependency is incorrect.	The specified parameter that others are dependent on cannot be deleted. Remove the dependency and then delete the parameter.
Forbidden%s	Not allowed to operate on the specified %s.	403	Operation is not permitted/the operation is prohibited.	You are not permitted to perform the operation.
NoPermission	User is not authorized to operate on the specified resource.	403	Operation is not permitted.	RAM authentication fails.
ExceedLimit%s	The specified %s count exceeds the limit.	400	The quota is exceeded.	The number of APIs, API groups or applications created in the user account exceeds the quota.
UserNotFound	The specified user cannot be	404	The specified user cannot be	The user cannot be

	found.		found.	found based on the input user information.
DomainCertificateNotFound	Cannot find the domain certificate.	400	The specified domain name certificate does not exist.	Check the ID and name of the input certificate.
DomainNotResolved	The specified domain has not been resolved.	400	The specified domain name is not resolved.	You must resolve the CNAME of the specified domain name to a second-level domain name of the group and then bind the specified domain name to the second-level domain name. The domain name must be resolved on the website from which you buy the domain name.
InvalidICPLicense	The specified domain have not got ICP license, or the ICP license does not belong to Alibaba Cloud.	400	The domain name filing fails.	The domain name to be bound must be firstly filed with Alibaba Cloud. Domain names filed with other systems must be filed for access to Alibaba Cloud. A filing number is needed for access filing. Each of ECS instances filed with Alibaba Cloud and having public IP addresses have five filing numbers.
Invalid%s.LengthLimit	The parameter %s length exceeds the limit.	400	The parameter is too long.	The parameter %s is too long. Modify the parameter and

				try again.
InvalidApiDefault	The ApiDefault value exceeds limit.	400	The default API throttling value exceeds the quota.	The value cannot exceed 100,000,000, regardless of the unit. For a higher quota, you must submit a ticket.
InvalidAppDefault	The AppDefault value must be smaller than the UserDefault and ApiDefault.	400	The AppDefault value does not comply with the rules.	The value must be less than the API throttling value and the user throttling value.
InvalidUserDefault	The UserDefault value must be bigger than the AppDefault and smaller than the ApiDefault.	400	The UserDefault value does not comply with the rules.	The value must be less than the API throttling value and greater than the application throttling value.
InvalidParamMapping	Parameters must be fully mapped.	400	Parameter mapping is invalid.	API creation requires full mapping between front-end and backend parameters. That is, a backend parameter name needs to be configured for each input parameter.
InvalidOwnerAccount	OwnerAccount is invalid.	400	The application owner account is invalid.	The Alibaba Cloud Mail account of the target user entered during operation authorization is invalid. Check and modify the account and try again.
ServiceForbidden	Your Gateway service is forbidden by risk control.	400	The API Gateway service is forbidden by risk control policies (the	Do not submit the request frequently. Try again later. If the problem persists after

			user must be forbidden by risk control policies).	retry, submit a ticket for consultation.
ServiceUnOpen	Your Gateway service has not been opened.	400	The service is not activated.	Activate the API Gateway service at Alibaba Cloud website.
ServiceInDept	Your API Gateway service is in dept.	400	(Your API Gateway) service is in outstanding payment.	The service can be used after account recharge or bill settlement.
EqualSignature	The new signature is the same as the old.	400	The new signature key is the same as the old one.	The modified backend signature key and secret cannot be the same as the old ones.
CertificateNot Match	The domain does not match the one in the certificate.	400	The domain name does not match that in the certificate.	The specified domain name does not match that in the certificate.
CertificateKeyNotMatch	The certificate private key does not match the public key.	400	The certificate keys do not match each other.	The certificate public key does not match with the private key.
PrivateKeyEncrypted	The certificate private key is encrypted, please upload the unencrypted version.	400	The private key cannot be encrypted.	The certificate private key is encrypted, but the unencrypted version must be uploaded.
CertificateSecretKeyError	The certificate private key is invalid.	400	The certificate private key is invalid.	Check and upload the private key again.
InvalidApiServiceAddress	The specified service address is not valid.	400	The API backend service address is invalid.	The configured API backend service address is invalid.

Client public error code. If the error code of HttpStatusCode is 4xx, the error code returns when you call Open APIs of Alibaba Cloud Products. The error code indicates that the service has an error. Generally, it is caused by incorrect request

format or method, parameter format or signature, or missing of required parameter, or throttling restriction. You must check the error code carefully and solve the problem accordingly.

Scenarios	Error code	Error message	Status code	Suggestion
API is not found.	InvalidApi.NotFound	Specified api is not found, please check your URL and method.	404	Check whether the specified action interface name is correct. Pay attention to the case-sensitive problem.
Required parameters are missing from the request.	Missing{ParameterName}	{ParameterName} is required for this action.	400	The specified parameter is required. Input the parameter.
AccessKeyID cannot be found.	InvalidAccessKeyId.NotFound	Specified AccessKey is not found.	404	Check whether a correct AccessKeyID is used for the call.
AccessKeyID is disabled.	InvalidAccessKeyId.Inactive	Specified AccessKey is disabled.	400	Check whether the AccessKey can be used.
The time stamp is invalid (Date and Timestamp).	InvalidTimestamp.Format	Specified time stamp or date value is not well formatted.	400	Check the time stamp.
The difference between the user time and server time exceeds 15 minutes.	InvalidTimestamp.Expired	Specified time stamp or date value is expired.	400	Check the time stamp.
The SignatureNonce is repeated.	SignatureNonceUsed	Specified signature nonce was used already.	400	
The format of the returned	InvalidParameter.Format	Specified parameter	400	Only values in XML/JSON

value is invalid.		format is not valid.		format are supported.
Parameter value verification fails.	Invalid{ParameterName}	Specified parameter {Parameter Name} is not valid.	400	Check whether the value of the specified parameter is correct.
HTTP request method is not supported.	UnsupportedHTTPMethod	Specified signature is not matched with our calculation .	400	Check the request method.
The signature method is not supported.	InvalidSignatureMethod	Specified signature method is not valid.	400	This parameter can be left empty by default.
The signature verification fails.	SignatureDoesNotMatch	Specified signature is not matched with our calculation .	400	The signature verification fails.
The call frequency exceeds the threshold.	Throttling.User	Request was denied due to user throttling.	400	Access the API later or reduce the access frequency.
The API access frequency exceeds the threshold.	Throttling.API	Request was denied due to api throttling.	400	Access the API later or reduce the access frequency.
AccessKeyID is missing.	MissingSecurityToken	SecurityToken is required for this action.	400	Check whether a correct AccessKeyID is used for the call.

API unsupport the channel

Cause of error

You may get an error when the request HTTP Schema is incorrect. Different APIs support different HTTP Schemas. API providers can set the APIs to support either or both HTTP and HTTPS requests.

The prompt "API unsupport the channel: HTTP" is returned when the API only supports HTTPS, but HTTP is used during API request.

The prompt "API unsupport the channel: HTTPS" is returned when the API only supports HTTP, but HTTPS is used during API request.

Solution

When the prompt "API unsupport the channel: HTTP" is returned, change HTTP to HTTPS and initiate the API call again.

When the prompt "API unsupport the channel: HTTPS" is returned, change HTTPS to HTTP and initiate the API call again.

Invalid signature

Cause of error

The signature at the client does not match the signature at the server.

Solution

When the signatures do not match, the gateway returns the StringToSign of the server signature through an X-Ca-Error-Message in the HTTP Response Header.

StringToSign is a string added before your request and used for signature computing. For more information, see [Request Signature Instructions](#).

StringToSign added locally at the client needs to be printed and checked for any differences. If the call demo provided by Alibaba Cloud is used, you can find the StringToSign before signature computing in the signature computing tools. Print this and check for any discrepancies.

Linefeed is not allowed in the HTTP Response Header, and linefeeds in StringToSign in the returned results are omitted. Compare the returned StringToSign with that in the reference documentation.

If StringToSigns at the server and client are consistent, check whether the AppKey and AppSecret used are correct. Particularly, check whether any spaces or other characters, that are not easily identifiable, have been added.

Invalid URL

Cause of error

The HTTP Method, Path, or specified stage (X-Ca-Stage) of the request is incorrect.

For example, an API is specified to be called in the test stage, but the API is not released to the test stage.

Note:

- If a stage isn't specified for the request, APIs in the release stage are accessed by default.
- An API where the definition is modified must be released again to take effect. In most cases, the path is modified, but the API has not been released again. An error is reported when the request is submitted based on the new path.

Solution

Check the three factors: HTTP Method, Path, and stage.

1. If POST request is required in API instructions, GET requests are not supported. The call methods must be consistent.
2. The request path must be consistent with the current running path. APIs that are modified, but not released, can result in a call failure.
3. An appropriate stage must be specified. The value of the parameter X-Ca-Stage in the request Header is "RELEASE/TEST", indicating the test and online stages, respectively. If this parameter is left empty, the online stage is used by default.
4. For more instructions on parameters and requests, see [Call an API](#).

Unauthorized

Cause of error

When requesting an API, the app that the AppKey belongs to is unauthorized to call the API.

Solution

Factors determining authorization validity include app, API, stage, and authorization.

1. If you are an open API user and use the app for testing, you must create an app on the API Gateway console. Then use the AppId to authorize the app on the API list page. For a self-testing purpose, the open API user needs to authorize the created app.
2. If you bought an API, you can check the authorized APIs of this app on the app details page. If the API to be called is not authorized, authorize the expected API.
3. If you use a partner's API instead of buying one, contact your partner and provide your AppId for authorization by the API provider.
4. The authorization is subject to the stage. When the app and API are in the same stage, the authorization and request must also be in the same stage. When an API is authorized in the A stage, services of the API in the B stage cannot be called. For more information about the request stage and other parameters, see [API request sample](#).
5. The most important thing is to check whether the wrong app is used or whether an incorrect API is called. Many APIs and apps exist, and sometimes they get mixed up and result in a call failure. For example, the app in the A stage is authorized, but the app in the B stage is called. Make sure all care is taken when calling the apps.

Unable to call the backend service

Check whether the entered backend service address is correct and make sure that the backend service can be accessed normally.

If your backend service is on ECS, check the security group settings to see if it can be accessed externally. Make sure that the security group allows access to the egress address of the API gateway.

- Get the Egress Address

View the instance to which group belongs from Apigateway Console->Publish APIs->API Groups->group details

The screenshot shows the 'Group Details' page for an API Gateway instance. The instance is a 'Dedicated VPC' with ID 'apigateway-cn-mp9181y1k003' and name 'wtest'. The region is 'China East 1 (Hangzhou)'. The instance is associated with a VPC and has a group traffic limit of 2500 QPS. The instance type is 'Dedicated VPC'.

Basic Information	
Region: China East 1 (Hangzhou)	Group Name: 专享test
Group ID: d2b99c22-0000-0000-0000-000000000000	Group ID: d2b99c22-0000-0000-0000-000000000000
Internet Subdomain: Disable Internet Subdomain	(The subdomain is only for API test, it is only 1000 times per day. Please bind your custom domain for your service.)
Subdomain Name	VPC Internet Subdomain: Disable
	The user's VPC has not been set for the current dedicated instance. Please set the VPC on the instance management page before opening the second level domain name
Instance Type: Dedicated VPC	Group Traffic Limit (QPS): 2500
Instance ID: apigateway-cn-mp9181y1k003	(Consistent with the dedicated instance)
Instance Name: wtest	Modify API Group's Instance
	Instance Type And Selection Guide
Network Access Policy	HTTPS Security Policy: HTTPS2_TLS1_0
	https://security.aliyun.com/doc/101347.htm
	(Be consistent with the dedicated instance HTTPS Policy)

Get the Egress Address from the instance

The screenshot shows the 'Instance Details' page for a dedicated VPC instance. The instance is a 'Dedicated Instance (VPC)' with ID 'apigateway-cn-mp9181y1k003'. The instance name is 'wtest'. The instance is associated with a VPC and has a group traffic limit of 2500 QPS. The instance type is 'Dedicated VPC'.

Instance Details	
Instance Name	wtest
Zone	Multi-Availability Zone 1(g.h)
HTTPS Security Policy	HTTPS2_TLS1_0
Entry Address	Bind to the user's VPC
Billing Method	Pay-As-You-Go
Create Time	Jul 19, 2019 09:51:27
Instance Specification	api.s1.small
Max Request Per Second	2500
SLA	99.95%
Max Internet Inbound Traffic	5G
Max Internet Outbound Traffic	100M
Egress Address	Internet Egress Address: 47.96.168.155, 47.97.155.13, 47.97.249.133, 47.97.156.114, 47.97.254.79
	VPC Network Egress Address: 100.104.255.0/26

- If you are using an intranet IP, make sure your backend services are in the same Region as your APIs.