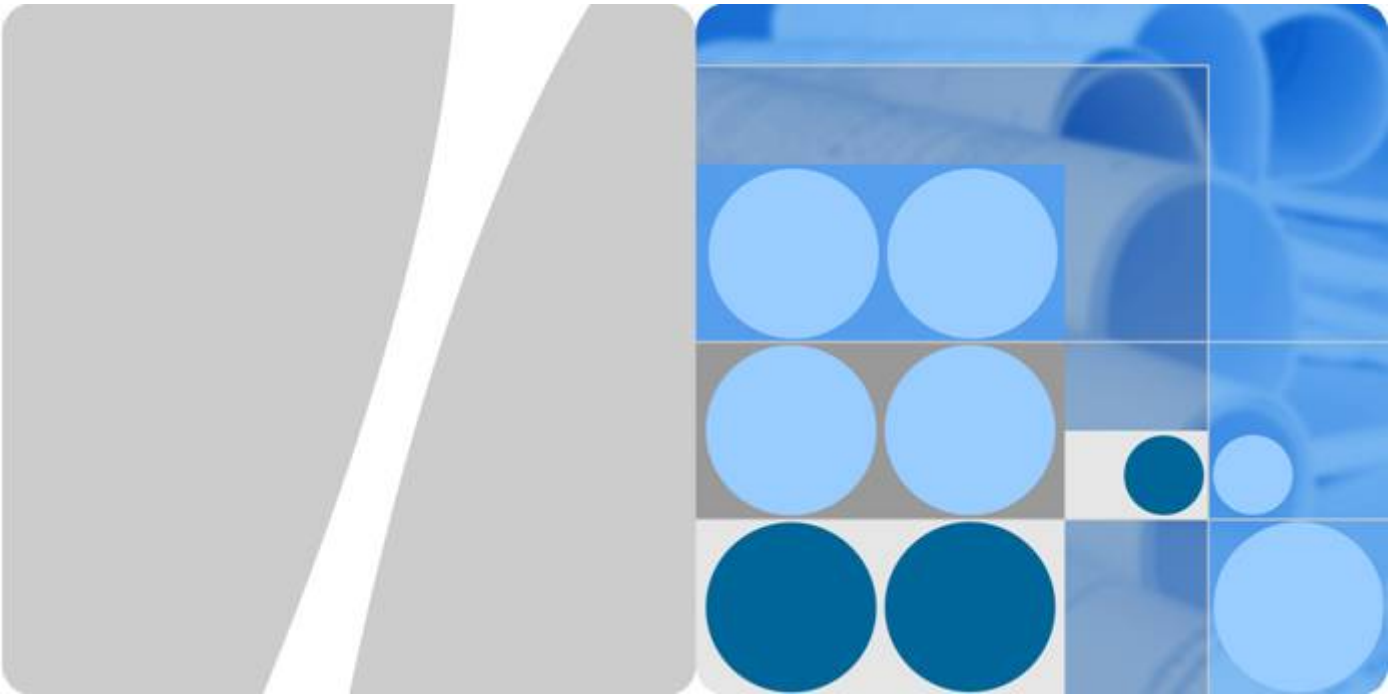

Natural Language Processing

API Reference

Issue 06

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Contents

1 Before You Start

This document provides descriptions, syntax, parameters, and examples of Natural Language Processing (NLP) APIs. You can find your desired content using **Table 1-1**.

Table 1-1 Document overview

Chapter	Description
API Overview	Components and lists of NLP APIs
Environment Preparation	Preparations before using the APIs
API Calling	Representational State Transfer (REST) message bodies, calling methods, and examples
NLP Fundamentals APIs	APIs for NLP Fundamentals, including word segmentation, named entity recognition (NER), and sentence vector APIs.
LG APIs	APIs for Language Generation (LG), including the text summarization API.
LU APIs	APIs for Language Understanding (LU), including sentiment analysis and text classification APIs.
MT APIs	APIs for Machine Translation (MT), including text translation and language detection APIs.
Common Parameters	Common parameters, status codes, and error codes used by NLP APIs.

1.1 Overview

Welcome to *Natural Language Processing API Reference*. Natural Language Processing (NLP) includes services such as NLP Fundamentals, Language Generation (LG), Machine Translation (MT), and Language Understanding (LU).

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

1.2 API Calling

NLP supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS. 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**.

Currently, NLP Fundamentals, LU, LG and MT support the following regions and endpoints:

Table 1-2 Regions and endpoints of NLP Fundamentals, LU, LG and MT

Region	Endpoint Region	Endpoint	Protocol
CN North-Beijing4	cn-north-4	nlp-ext.cn-north-4.myhuaweicloud.com	HTTPS

1.4 Restrictions and Limitations

For details, see the API description and **Restrictions**.

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 in IAM using an account to use cloud services. Each user has its 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.

For details, see **Regions and AZs**.

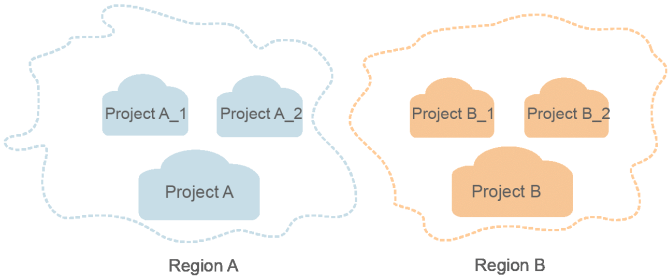
- AZ

  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

NLP provides the following APIs, as shown in **Table 2-1**.

Table 2-1 API description

Type	Description
NLP Fundamentals APIs	Includes word segmentation, multi-granularity word segmentation, dependency syntax analysis, named entity recognition (NER), text similarity, sentence vector, keyword extraction, event extraction, and entity linking APIs.
LG API	Includes text summarization API, poem generation API, and text generation API.
LU APIs	Includes sentiment analysis, text classification, and intent understanding APIs.
MT APIs	Includes text translation and language detection APIs.

3 Calling APIs

3.1 Applying for NLP

Before using any service of Content Moderation, you must apply for it. The following is the procedure for applying for services of Content Moderation.

NOTE

- Before applying for any service of Content Moderation, apply for a HUAWEI CLOUD account and complete real-name authentication.
- If you use NLP for the first time, apply for it first. You only need to apply for NLP once.
- If you use NLP for the first time, you need to configure OBS access permissions. You only need to configure them once. For details, see **Configuring Access Permissions of OBS**.

1. Log in to the product page and click **Console** in the upper right corner. The **Console** page is displayed.
2. Click **Service List** and choose **EI Enterprise Intelligent > Natural Language Processing**.
3. On the displayed page, apply for NLP.
4. Select the target service on the **Commercial Services** or **Beta Services** area. To apply for a beta service, go to **5**. To apply for a commercial service, go to **6**.
5. Click **Apply for Open Beta Test**.

   NOTE

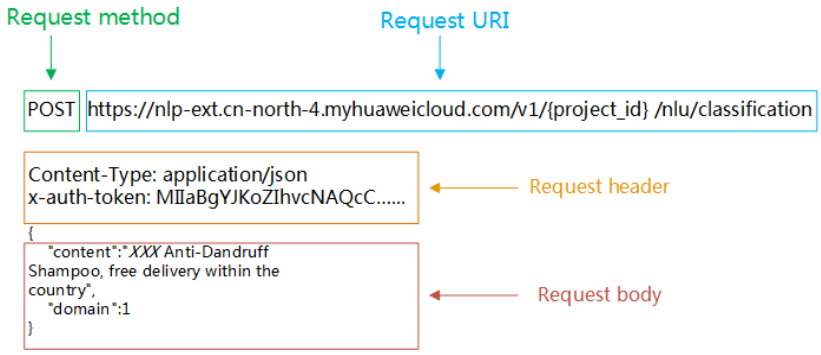
   The OBT application is manually reviewed. Generally, it takes one to two days for approval. In the case of holidays, the approval may take longer.
6. Click **Apply Now**.
7. After the OBT application or service subscription is complete, the service is enabled.

3.2 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.

A request consists of the request URL, request method, request header, and request body, which will be elaborated in this section. A request example is as follows:

Figure 3-1 Example request



Request URI

A request URI is in the following format:

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

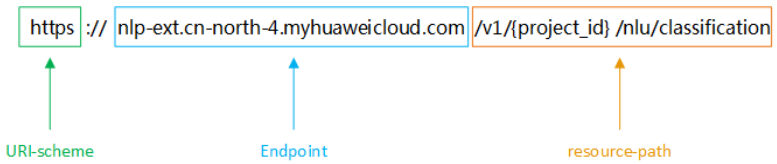
Although a request URI is included in the request header, most programming languages or frameworks require the request URI to be transmitted separately.

- **URI-scheme**: Protocol used to transmit requests. All APIs use HTTPS.
- **Endpoint**: Domain name or IP address of the server bearing the REST service endpoint. Obtain the value from **Regions and Endpoints**. For example, the endpoint of IAM in region CN North-Beijing1 is iam.cn-north-1.myhuaweicloud.com.
- **resource-path**: Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the **resource-path** of the text classification API used to obtain a user token is **/v1/*{project_id}*/nlu/classification**. ***{project_id}*** indicates the project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
- **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". This parameter is not used.

For example, to call the text classification API in the **CN North-Beijing4** region, obtain the endpoint of NLP (nlp-ext.cn-north-4.myhuaweicloud.com)) for this region and the **resource-path** (**/v1/{project_id}/nlu/classification**) in the URI of the **text classification API**. Then, construct the URI as follows:

```
https://nlp-ext.cn-north-4.myhuaweicloud.com/v1/{project_id}/nlu/classification
```


Figure 3-2 Example URI



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** 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:

- **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 URI of the **text classification API**, the request method is POST. The request is as follows:

```
POST https://nlp-ext.cn-north-4.myhuaweicloud.com/v1/{project_id}/nlu/classification
```

Request Header

You can also add additional header fields to a request, such as the fields required by a specified URI or HTTP method. For example, to request for the authentication information, add **Content-Type**, which specifies the request body type.

Common request header fields are as follows:

- **Content-Type**: specifies the request body type or format. This field is mandatory and its default value is **application/json**. Other values of this field will be provided for specific APIs if any.
- **X-Auth-Token**: specifies a user token only for token-based API authentication. NLP uses token-based authentication. For details about the user token, see section **Authentication**.

The following provides an example request with a request header included.

```
POST https://nlp-ext.cn-north-4.myhuaweicloud.com/v1/{project_id}/nlu/classification

Content-Type: application/json
x-auth-token: MIIaBgYJKoZIhvcNAQcC...
```


Request Body

The body of a request is often sent in a structured format as specified in the **Content-Type** header field. The request body transfers content except the request header. 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 **text classification** API, obtain the request parameters and parameter description in the API request. The following provides an example request with a body included.

```
POST https://nlp-ext.cn-north-4.myhuaweicloud.com/v1/{project_id}/nlu/classification

Content-Type: application/json
x-auth-token: MIIaBgYJKoZIhvcNAQcC...
{
    "content":"XXX Anti-Dandruff Shampoo, free delivery within the country",
    "domain":1
}
```

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 **text classification** API, obtain the request parameters and parameter description in the API request.

3.3 Authentication

NLP currently supports the token-based authentication.

Token-based Authentication

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

For details about how to obtain the token required by NLP, see the related information in the following section. For more details, see **Obtaining a User Token**.

In the case of the API used to obtain a user token, the request parameters and parameter description can be obtained from the API request. In the header of a request for calling this API, only the **Content-Type** field needs to be added. An example request is as follows:

Set the username (***username***), domain name (***domainname***), and login password (*********). For details, see **What Are the Username, Domain Name, and Project Name in the Token Message Body**.

The endpoint for obtaining the token and project name must be consistent with that of the NLP service. To obtain a token when accessing the endpoint in **CN North-Beijing4** (**nlp-ext.cn-north-4.myhuaweicloud.com**), use the endpoint **https://iam.cn-north-4.myhuaweicloud.com** and set *projectname* to **cn-north-4**.

When calling the API to **obtain a user token**, you must set **auth.scope** in the request body to **project**.

```
POST https://iam.cn-north-4.myhuaweicloud.com/v3/auth/tokens

Content-Type: application/json

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

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 authenticate the calling of NLP APIs.

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

AK/SK-based Authentication

To use AK/SK-based authentication, you are advised to see ***Natural Language Processing SDK Reference*** or use the signature SDK in this section.

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**.

NOTICE

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

For details about how to obtain the AK/SK, see **Obtaining an AK/SK**.

3.4 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 response. For more information, see **Status Code**.

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

Response Header

Similar to a request, a response also has a header, for example, **Content-Type**, **x-request-id**. A response header in NLP 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 **text classification** API, the following request body is returned. For details about the format, see the **text classification** response.

```
{
   "result": {
    "content":"XXX Anti-Dandruff Shampoo, free delivery within the country",
      "label": 0,
      "confidence": 0.5190434
   }
}
```

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": "NLP.0301",
    "error_msg": "query param error content.at least one of Chinese, English, or number;"
}
```

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

4 NLP APIs

4.1 NLP Fundamentals APIs

4.1.1 Word Segmentation

Introduction

This API is used to segment words in the text.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format
  POST /v1/{project_id}/nlp-fundamental/segment
- Parameter description

Table 4-1 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-2 describes the request parameters.

Table 4-2 Request parameters

Parameter	Type	Mandatory	Description
text	String	Yes	Text to be split. The text is encoded using UTF-8 and contains 1 to 512 characters.
pos_switch	Integer	No	Whether to enable part-of-speech tagging (POS tagging). The options are **1** (yes) and **0** (no). The default value is **0**.
lang	String	No	Supported text language type. Currently, Chinese (**zh**) and English (**en**) are supported. The default value is **zh**.
criterion	String	No	Supported word segmentation criterion Supported word segmentation criteria. Currently, Peking University standard (**PKU**) and Chinese Penn Treebank (**CTB**) are supported. The default value is **PKU**. The default word segmentation criterion for English text is **Penn TreeBank**. You do not need to configure this parameter.

Response

Table 4-3 describes the response parameters.

Table 4-3 Response parameters

Parameter	Type	Description
words	Array of words	Word segmentation result. For details, see **Table 4-4**.
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Table 4-4 Word field data structure

Parameter	Type	Description
content	String	Word text.
pos	String	Lexical character corresponding to a word. For details, see **Table 4-5**, **Table 4-6**, and **Table 4-7**.

Table 4-5 Part of speech (POS) description (PKU)

Class-1 POS	Class-2 POS	Class-3 POS
n: Noun	nr: Name of a person	• nr1: Chinese surname • nr2: Chinese given name • nrj: Japanese name • nrf: Transliterated name
	ns: Place name	nsf: Transliterated place name
	nt: Organization or group name	-
	nz: Other exclusive name	-
	nl: Nominal locution	-
	ng: Nominal morpheme	-
t: Time word	tg: Time morpheme	-
s: Locative word	-	-
f: Positional word	-	-
v: Verb	vd: Adverbial form of a verb	-
	vn: Gerund	-
	vshi: Copula verb	-
	vyou: Verb indicating "has/have"	-
	vf: Directional verb	-
	vx: Formal verb	-
	vi: Intransitive verb	-
	vl: Verbal locution	-

Class-1 POS	Class-2 POS	Class-3 POS
	vg: Verbal morpheme	-
a: Adjective	ad: Adverbial adjective	-
	an: Nominal adjective	-
	ag: Adjective morpheme	-
	al: Adjective locution	-
b: Distinguishing word	bl: Distinguishing locution	-
z: Status word	-	-
r: Pronoun	rr: Personal pronoun	-
	rz: Demonstrative pronoun	• rzt: Demonstrative pronoun for time • rzs: Demonstrative pronoun for location • rzv: Demonstrative pronoun for predicate
	ry: Interrogative pronoun	• ryt: Interrogative pronoun for time • rys: Interrogative pronoun for location • ryv: Interrogative pronoun for predicate
	rg: Pronominal morpheme	-
m: Numeral	mq: Number word	-
	mg: A, B, C, D, E, F, G, H, N, and G	-
q: Classifier	qv: Verbal classifier	-
	qt: Time classifier	-
d: Adverb	-	-
p: Preposition	pba: Preposition **ba**	-
	pbei: Preposition **bei**	-
c: Conjunction	cc: Coordinating conjunction	-
u: Particle	uzhe: Particle	-
	ule: Particle	-

Class-1 POS	Class-2 POS	Class-3 POS
	uguo: Particle	-
	ude1: Particle	-
	ude2: Particle	-
	ude3: Particle	-
	usuo: Particle	-
	udeng: Particle	-
	uyy: Particle	-
	udh: Particle	-
	uls: Particle	-
	uzhi: Particle	-
	ulian: Particle	-
e: Exclamation	-	-
y: Discourse word	-	-
o: Onomatopoeia	-	-
h: Prefix	-	-
k: Suffix	-	-
x: character string	xe: Email character string	-
	xs: Weibo session separator	-
	xm: Emoticon	-
	xu: Website URL	-
w: Punctuation	wkz: Chinese left brackets	-
	wky: Chinese right brackets	-
	wyz: Chinese left quotation marks	-
	wyy: Chinese right quotation marks	-
	wj: Chinese full stop	-
	ww: Question marks	-
	wt: Exclamation marks	-

Class-1 POS	Class-2 POS	Class-3 POS
	wd: Commas	-
	wf: Semicolons	-
	wn: Enumeration comma	-
	wm: Colons	-
	ws: Ellipsis	-
	wp: Dashes	-
	wb: Percentile and permil	-
	wh: Unit	-

Table 4-6 POS description (CTB)

POS	Description	Example
AD	Adverb	word-1, word-2, word-3
AS	Dynamic particle	word-4, word-5, word-6
BA	"ba" structure	word-7
CC	Coordinating conjunction	word-8, word-9
CD	Quantifier	One, two, three
CS	Subordinating conjunction	Although, if, when
DEC	Complement or nominalization	word-10, word-11
DEG	Conjunctive or possessive	word-12, word-13
DER	Complement **de**	de
DEV	Adverb **di**	di
DT	Determiner	word-14, word-15, word-16
ETC	word-17	word-17, word-18
FW	Loanword	A E B
IJ	Exclamation	word-18, word-19
JJ	Modifier for noun	Big, new, small
LB	Long **bei** structure	word-20, word-21, word-22

POS	Description	Example
LC	Positional word	middle, upper
M	Classifier	Unit, year, dollar
MSP	Particle	Particle-1, particle-2, particle-3
NN	Noun	Economy, enterprise, person
NR	Proper noun	China, Zhejiang
NT	Time noun	Present, last year
OD	Numeral	First, second, top
ON	Onomatopoeia	O
P	Preposition	Preposition-1, preposition-2, preposition-3
PN	Pronoun	He, I, myself
PU	Punctuation	Chinese comma, Chinese full stop
SB	Short **bei** structure	word-23, word-24
SP	Particle at the end of a sentence	Particle-1, particle-2, particle-3
VA	Predicative adjective	Big, many, good
VC	Linking verb	Verb-1, verb-2, verb-3
VE	Verb indicating "has/ have"	Verb-4, verb-5, verb-6
VV	Verb	Verb-7, verb-8, verb-9

Table 4-7 POS description (Penn TreeBank)

POS	Description	Example
CC	Coordinating conjunction	and, but, or
CD	Cardinal number	one, two
DT	Determiner	a, the
EX	There be, to exist	there
FW	Foreign word	mea, culpa

POS	Description	Example
IN	Preposition, subordinating conjunction	of, in, by
JJ	Adjective	yellow
JJR	Comparative form of adjectives	bigger
JJS	Superlative form of adjectives	wildest
LS	List item marker	1, 2, One
MD	Modal verb	can, could, might
NN	Noun, countable or uncountable	llama
NNS	Noun, in plural form	llamas
NNP	Proper noun, in singular form	IBM
NNPS	Proper noun, in plural form	Carolinas
PDT	Predeterminer	all, both
POS	Possessive adjective	's
PRP	Personal pronoun	I, me, you,
PRP$	Possessive pronoun	my, your, yours
RB	Adverb	quickly
RBR	Comparative form of adverbs	faster
RBS	Superlative form of adverbs	fastest
RP	Particle	up, off
SYM	Sign (mathematics or science)	+, % ,&
TO	to	to
UH	Exclamation	ah, oops
VB	Basic form of verbs	eat
VBD	Past tense of verbs	ate

POS	Description	Example
VBG	Gerund or present participle	eating
VBN	Past participle	eaten
VBP	Non-third person singular form of verbs	eat
VBZ	Third person singular form of verbs	eats
WDT	wh-determiner	which, that
WP	wh-pronoun	what, who
WP$	wh-possesive pronoun	whose
WRB	wh-adverb	how, where
PU	Punctuation	, . :

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/segment

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

Request Body:
   {
      "text":"Text to segment",
      "pos_switch":1,
      "lang":"zh",
      "criterion":"PKU"
   }
```

- Example response
  - Successful response example

```
{
   "words": [
      {
         "content": "word-1",
         "pos": "t"
      },
      {
         "content": "word-2",
         "pos": "n"
      },
      {
         "content": "word-3",
         "pos": "d"
      },
      {
         "content": "word-4",
         "pos": "a"
      }
   ]
}
```


- Failed response example

```
{
   "error_code": "NLP.0301",
   "error_msg": "The length of text should be in the range of 1-512"
}
```

Status code

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

Error Code

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

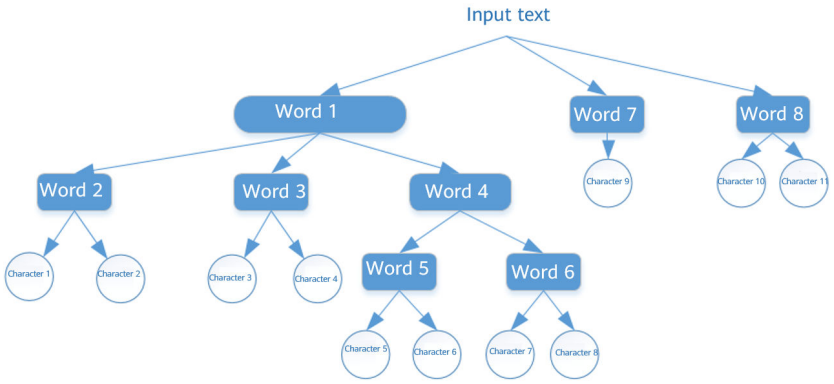
4.1.2 Multi-granularity Word Segmentation

Introduction

Input a sentence, and a hierarchical structure of all words with different granularities is output.

The following figure shows the hierarchical structure of the input text after multi-granularity word segmentation. The white circle is a character node, and the blue rounded matrix is a word node.

Figure 4-1 Multi-granularity word segmentation



This API is free of charge and can be called twice per second.

URI

- URI format

```
POST /v1/{project_id}/nlp-fundamental/multi-grained-segment
```

- Parameter description

Table 4-8 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-9 describes the request parameters.

Table 4-9 Request parameters

Parameter	Type	Mandatory	Description
text	String	Yes	Text to be analyzed. The text is encoded using UTF-8 and contains 1 to 64 characters.
lang	String	No	Supported text language type. Currently, Chinese (**zh**) and English (**en**) are supported. The default value is **zh**.
granularity	Integer	No	Segmentation granularity. **1** indicates the finest granularity, and **2** indicates the coarsest granularity. In other cases, the segmentation tree result of all granularities is returned by default.

Response

Table 4-10 describes the response parameters.

Table 4-10 Response parameters

Parameter	Type	Description
result	Array of node objects or array of strings	Word segmentation result By default, the word segmentation tree result of all granularities is returned. If the word segmentation granularity is selected, the word list of the corresponding granularity is returned.

Table 4-11 Data structure description of **node**

Parameter	Type	Description
content	String	Text content corresponding to the node, which is encoding and normalized based on the Unicode of the text For example, the Chinese comma is mapped to the English comma.
type	String	Node type. The options are **WORD** (word type) and **CHAR** (character type).
sub_contents	Array of node objects	Subnode list

Example

- Example request 1

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/multi-grained-segment

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

Request Body:
  {
     "text": "Input text",
     "lang":"zh",
     "granularity":2
  }
```

- Example Response 1
  - Successful example response

```
{
  "result": [
    "Word 1",
    "Word 7",
    "Word 8",
  ]
}
```

- Example request 2

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/multi-grained-segment

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

Request Body:
  {
     "text": "Input text",
     "lang":"zh"
  }
```

- Example response 2
  - Successful example response

```
{
  "result": [
    {
      "content": "Word 1",
```



```
  "sub_contents": [
   {
    "content": "Word 2",
    "sub_contents": [
     {
      "content": "Charater 1",
      "type": "CHAR"
     },
     {
      "content": "Character 2",
      "type": "CHAR"
     }
    ],
    "type": "WORD"
   },
   {
    "content": "Word 3",
    "sub_contents": [
     {
      "content": "Character 3",
      "type": "CHAR"
     },
     {
      "content": "Character 4",
      "type": "CHAR"
     }
    ],
    "type": "WORD"
   },
   {
    "content": "Word 4",
    "sub_contents": [
     {
      "content": "Word 5",
      "sub_contents": [
       {
        "content": "Character 5",
        "type": "CHAR"
       },
       {
        "content": "Character 6",
        "type": "CHAR"
       }
      ],
      "type": "WORD"
     },
     {
      "content": "Word 6",
      "sub_contents": [
       {
        "content": "Character 7",
        "type": "CHAR"
       },
       {
        "content": "Character 8",
        "type": "CHAR"
       }
      ],
      "type": "WORD"
     }
    ],
    "type": "WORD"
   }
  ],
  "type": "WORD"
 },
 {
  "content": "Word 7",
  "sub_contents": [
```



```
      {
        "content": "Character 9",
        "type": "CHAR"
      }
    ],
    "type": "WORD"
  },
  {
    "content": "Word 8",
    "sub_contents": [
      {
        "content": "Character 10",
        "type": "CHAR"
      },
      {
        "content": "Character 11",
        "type": "CHAR"
      }
    ],
    "type": "WORD"
  }
 ]
}
```

- Failed example response

```
{
   "error_code": "NLP.0301",
   "error_msg": "the length of the text must between 1-64"
}
```

Status Code

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

Error Code

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

4.1.3 Dependency Syntax Analysis

Introduction

This API is used to identify the dependencies between words in a sentence.

This API is free of charge and can be called twice per second.

URI

- URI format
  POST /v1/{project_id}/nlp-fundamental/dependency-parser
- Parameter description

Table 4-12 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-13 describes the request parameters.

Table 4-13 Request parameters

Parameter	Type	Mandatory	Description
text	String	Yes	Text to be analyzed. The text is encoded using UTF-8 and contains 1 to 32 characters.
lang	String	No	Supported language type. Currently, only Chinese is supported. The default value is **zh**.

Response

Table 4-14 describes the response parameters.

Table 4-14 Response parameters

Parameter	Type	Description
words	Array of words objects	Result of the dependency syntax analysis For details, see **Table 4-15**.
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Table 4-15 Data structure description of **words** field

Parameter	Type	Description
id	Integer	Word ID, starting from 1
word	String	Word content
pos	String	Part of speech. For details, see **Table 4-6**.
head_word_id	String	ID of a head sentence. If it is the root sentence, the default value is **0**.

Parameter	Type	Description
dependency_label	String	Dependency between a word and the head sentence. It uses the Chinese Open Dependency Treebank (CODT) dependency tag set. For details, see **Table 4-16**.

Table 4-16 CODT relationship description

Relationship Label	Description	Example	Labeling Result
root	Sentence root	I love mom.	(Root -> love), where Root is a virtual word
sasubj-obj	Same subject and object	I have been studying and thinking about this question.	(Studying –> thinking)
sasubj	Same subject	I walk into the playground and play basketball.	(Walk into –> play)
dfsubj	Different subjects	This book is too expensive. I'm going to buy another one.	(Expensive –> going to)
subj	subject	I love mom.	(I <– love)
subj-in	subject inside a subject-predicate predicate (Internal subject of the predicate in the subject-predicate structure)	He has ache in his head.	(Head <– ache)
obj	Object	I love mom.	(Love –> mom)
pred	Predicate	Order him to sweep the floor.	(Him –> sweep the floor)
att	Attribute modifier	State President	(State <- President)
adv	Adverbial modifier	Like very much.	(Very much <– like)
cmp	Complement modifier	Wash hands neatly.	(Wash –> neatly)
coo	Coordination construction	Flowers and applause.	(Flowers –> applause)

Relationship Label	Description	Example	Labeling Result
pobj	Preposition object	Read at home.	(At –> home)
iobj	Indirect-object	Give him a book.	(Give –> him)
de	de-construction	Text for analysis	(word-1 <– de)
adjct	Adjunct	Text for analysis	(word-1 -> adjunct)
app	Appellation	Hello, Miss.	(Miss <– hello)
exp	Explanation	Putin (Russian president)	(Putin –> president)
punc	Punctuation	I love mom.	(Love ->.)
frag	Fragment	You, me, China.	(You > me > China)
repet	Repetition	Have you had, had your dinner?	(Had –> had)

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/dependency-parser

Request Header:
   Content-Type: application/json
   X-Auth-Token:
MIIFbwYJKoZIhvcNAQcCoIIFYDCCBVwCAQExDTALBglghkgBZQMEAgEwggNBgkqhkiG9...
Request Body:    {
       "text": "Text for analysis",
       "lang":"zh"
   }
```

- Example response

```
{
   "words": [
      {
         "id": 1,
         "word": "word-1",
         "pos": "NR",
         "head_word_id": 2,
         "dependency_label": "subj"
      },
      {
         "id": 2,
         "word": "word-2",
         "pos": "VV",
         "head_word_id": 0,
         "dependency_label": "root"
      },
      {
         "id": 3,
         "word": "word-3",
         "pos": "NN",
         "head_word_id": 2,
         "dependency_label": "obj"
      }
```



```
  ]
}
```

- Failed example response

```
{
   "error_code": "NLP.0301",
   "error_message": "Missing parameters:text"
}
```

Status Code

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

Error Code

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

4.1.4 NER (Basic Edition)

Introduction

This API is used for named entity recognition (NER). Currently, it can be called to identify and analyze person names, locations, time, and organization names in the text.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format

```
POST /v1/{project_id}/nlp-fundamental/ner
```

- Parameter description

Table 4-17 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-18 describes the request parameters.

Table 4-18 Request parameters

Parameter	Type	Mandatory	Description
text	String	Yes	Text to be analyzed. The text is encoded using UTF-8. Chinese text contains 1 to 512 characters and English and Spanish text contains 1 to 2,000 characters.
lang	String	No	Supported text language type. Currently, Chinese (**zh**), English (**en**), and Spanish (**es**) are supported. The default value is **zh**.

Response

Table 4-19 describes the response parameters.

Table 4-19 Response parameters

Parameter	Type	Description
named_entities	Array of named_entity objects	NER result. For details, see **Table 4-20**.
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Table 4-20 Data structure description of **named_entity**

Parameter	Type	Description
word	String	Entity text.

Parameter	Type	Description
tag	String	Entity type • Currently, Chinese text supports **nr** (person name), **ns** (location name), **nt** (organization name), and **t** (time) tags. • English text supports **per** (person name), **loc** (location name), and **org** (organization name) tags. • Currently, Spanish text supports **per** (person name), **loc** (location name), **org** (organization name), and **t** (time) tags.
offset	Integer	Starting position of the entity text in the text to be analyzed.
len	Integer	Entity text length

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/ner

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

Request Body:
   {
   "text":"Text for NER",
      "lang":"zh"
   }
```

- Example response
  - Successful response example

```
{
   "named_entities": [
      {
         "word": "word-1",
         "tag": "t",
         "offset": 0,
         "len": 2
      },
      {
         "word": "word-2",
         "tag": "nr",
         "offset": 5,
         "len": 3
      },
      {
         "word": "word-3",
         "tag": "ns",
         "offset": 10,
         "len": 2
      }
   ]
}
```


- Failed response example

```
{
   "error_code": "NLP.0301",
   "error_msg": "The length of text should be in the range of 1-512."
}
```

Status code

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

Error Code

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

4.1.5 NER (Domain-specific Edition)

Introduction

This API is used to identify named entities of text. Currently, NER is supported in the general, business, and entertainment domains.

- General domain: includes entities such as person name, location, organization, time point, date, percentage, currency, ordinal number, quantifier, nationality, occupation, email address, country, and festival.
- Business domain: includes entities such as company name, brand, job, position, email address, mobile number, telephone number, IP address, ID card number, and website.
- Entertainment domain: includes entities such as movie name, animation name, book name, Internet-related entity, song name, product name, drama name, and TV program name.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format

```
POST /v1/{project_id}/nlp-fundamental/ner/domain
```

- Parameter description

Table 4-21 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-22 describes the request parameters.

Table 4-22 Request parameters

Parameter	Type	Mandatory	Description
text	String	Yes	Text to be analyzed. The text is encoded using UTF-8 and contains 1 to 512 characters.
lang	String	No	Supported language type. Currently, only Chinese is supported. The default value is **zh**.
domain	String	No	Supported domain type. The value can be **general**, **business**, or **entertainment**. The default value is **general**.

Response

Table 4-23 describes the response parameters.

Table 4-23 Response parameters

Parameter	Type	Description
named_entities	Array of named_entity objects	NER result. For details, see **Table 4-24**.
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Table 4-24 Data structure description of **named_entity**

Parameter	Type	Description
word	String	Entity text

Parameter	Type	Description
tag	String	Entity type • The general domain includes **nr** (person name), **ns** (location), **nt** (organization), **tpt** (time point), **day** (date), **pct** (percentage), **mny**, (currency), **ord** (ordinal number), **qtt** (quantifier); **race** (nationality), **job**, **email**, **coun** (country), and **fest** (festival). • The business domain includes **com** (company name), **bra** (brand), **job**, **post** (position), **email**, **cell** (mobile number), **tele** (telephone number), **ip** (IP address), **id** (ID card number), and **web** (website). • The entertainment domain includes **mov** (movie name), **anime** (animation name), **book** (book name), **int** (Internet-related entity), **song** (song name), **pro** (product name), **dra** (drama name), and **tv** (TV program name).
offset	Integer	Start position of the entity text in the text to be analyzed
len	Integer	Length of an entity text

Example 1

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/ner/domain

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

Request Body:
   {
   "text":"Text for NER",
   "lang":"zh",
   "domain":"general"
   }
```

- Example response
  - Successful example response

```
{
   "named_entities": [
      {
         "len": 2,
         "offset": 0,
         "tag": "day",
         "word": "word-1"
      },
      {
```



```
            "len": 3,
            "offset": 2,
            "tag": "job",
            "word": "word-2"
        },
        {
            "len": 3,
            "offset": 5,
            "tag": "nr",
            "word": "word-3"
        },
        {
            "len": 2,
            "offset": 10,
            "tag": "ns",
            "word": "word-4"
        },
        {
            "len": 2,
            "offset": 32,
            "tag": "ord",
            "word": "word-5"
        }
    ]
}
```

  - Failed example response

```
{
    "error_code": "NLP.0301",
    "error_msg": "The length of text should be in the range of 1-512."
}
```

Example 2

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/ner/domain

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

Request Body:
    {
        "text":"Programmer Xiaoming is a Huawei employee. His email address is xiaoming@xx.com and
phone number is 12345678.",
    "lang":"zh",
        "domain":"business"
    }
```

- Example response
  - Successful example response

```
{
    "named_entities": [
        {
            "len": 3,
            "offset": 0,
            "tag": "job",
            "word": "word-2"
        },
        {
            "len": 2,
            "offset": 6,
            "tag": "com",
          "word": "Huawei"
        },
        {
            "len": 15,
            "offset": 15,
```



```
            "tag": "email",
            "word": "xiaoming@xx.com"
        },
        {
            "len": 8,
            "offset": 33,
            "tag": "tele",
            "word": "12345678"
        }
    ]
}
```

  - Failed example response

```
{
    "error_code": "NLP.0301",
    "error_msg": "The length of text should be in the range of 1-512."
}
```

Example 3

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/ner/domain

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

Request Body:
    {
       "text": "Text for NER",
    "lang":"zh",
        "domain":"entertainment"
    }
```

- Example response
  - Successful example response

```
{
    "named_entities": [
        {
            "len": 3,
            "offset": 8,
            "tag": "anime",
            "word": "word-1"
        },
        {
            "len": 2,
            "offset": 18,
            "tag": "song",
            "word": "word-2"
        },
        {
            "len": 4,
            "offset": 25,
            "tag": "pro",
            "word": "word-3"
        },
        {
            "len": 3,
            "offset": 31,
            "tag": "dra",
            "word": "word-4"
        }
    ]
}
```

  - Failed example response

```
{
    "error_code": "NLP.0301",
```



```
    "error_msg": "The length of text should be in the range of 1-512."
}
```

Status Code

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

Error Code

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

4.1.6 Text Similarity (Basic Edition)

Introduction

This API is used to compute the similarity of texts.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format
  POST /v1/{project_id}/nlp-fundamental/text-similarity
- Parameter description

Table 4-25 URI parameters

Parameter	Mandatory	Description
project_id	Yes.	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-26 describes the request parameters.

Table 4-26 Request parameters

Parameter	Type	Mandatory	Description
text1	String	Yes	Text 1 to be analyzed. The text is encoded using UTF-8. Chinese text contains 1 to 512 characters and English text contains 1 to 2,000 characters.

Parameter	Type	Mandatory	Description
text2	String	Yes	Text 2 to be analyzed. The text is encoded using UTF-8. Chinese text contains 1 to 512 characters and English text contains 1 to 2,000 characters.
lang	String	No	Supported text language type. The default value is **zh**. Currently, Chinese and English are supported. The values are **zh** and **en**, respectively.

Response

Table 4-27 describes the response parameters.

Table 4-27 Response parameters

Parameter	Type	Description
similarity	Float	Similarity score. The value ranges from 0 to 1. By default, eight digits are reserved after the decimal point.
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/text-similarity

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

Request Body:
    {
  "text1":"Text for analysis",
"text2": "Text for analysis",
        "lang":"zh"
    }
```

- Example response
  - Successful response example
    ```
    {
      "similarity":0.73369961
    }
    ```
  - Failed response example
    ```
    {
        "error_code": "NLP.0301",
        "error_msg": "argument valid error:text2.text2 for text similarity should be between 1 to 512 ;text2.must not be blank;"
    }
    ```

Status Code

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

Error Code

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

4.1.7 Text Similarity (Advanced Edition)

Introduction

This API is used to compute the similarity of texts.

For details about endpoints, see **Endpoints**.

This API is free of charge and can be called twice per second.

URI

- URI format
  ```
  POST /v1/{project_id}/nlp-fundamental/text-similarity/advance
  ```
- Parameter description

Table 4-28 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-29 describes the request parameters.

Table 4-29 Request parameters

Parameter	Type	Mandatory	Description
text1	String	Yes	Text 1, on which the text similarity is to be computed. The text is encoded using UTF-8 and contains 1 to 512 characters.
text2	String	Yes	Text 2, on which the text similarity is to be computed. The text is encoded using UTF-8 and contains 1 to 512 characters.
lang	String	No	Supported language type. Currently, only Chinese is supported. The default value is **zh**.

Response

Table 4-30 describes the response parameters.

Table 4-30 Response parameters

Parameter	Type	Description
similarity	Float	Similarity score. The value ranges from 0 to 1. By default, eight digits are reserved after the decimal point.
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/text-similarity/advance

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



```
Request Body:
  {
     "text1":"What's the fun in Hangzhou?",
     "text2": "Which place is interesting in Hangzhou?",
     "lang":"zh"
  }
```

- Example response
  - Successful example response
    ```
    {
      "similarity":0.93171031
    }
    ```
  - Failed example response
    ```
    {
       "error_code": "NLP.0301",
       "error_msg": "text1 must not be null. text2 must not be null"
    }
    ```

Status Code

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

Error Code

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

4.1.8 Sentence Vector

Introduction

This API is used to return the corresponding sentence vector when you enter a sentence.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format
  ```
  POST /v1/{project_id}/nlp-fundamental/sentence-embedding
  ```
- Parameter description

Table 4-31 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-32 describes the request parameters.

Table 4-32 Request parameters

Parameter	Type	Mandatory	Description
sentences	Array of strings	Yes	Text list. The text is encoded using UTF-8 and contains 1 to 512 characters. The text list contains 1 to 1,000 text data records. Chinese is supported currently.
domain	String	No	Name of the model used for computing the sentence vector. Currently, only the default value **general** is available.

Response

Table 4-33 describes the response parameters.

Table 4-33 Response parameters

Parameter	Type	Description
vectors	Array of floats	Sentence vector result list. Sentence vectors are returned according to the input sentence sequence. The default dimension of the sentence vector is **100**.
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/sentence-embedding

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

Request Body:
    {
....."sentences":["Zhang San is in Beijing today.","Li Si is in Beijing today."],
        "domain":"general"
    }
```

- Example response
  - Successful response example
    ```
    {
      "vectors": [
        [0.1331, 0.0488, 0.2441, 0.2514, -0.6771, 0.4782, 0.6759, 0.015, 0.0064, -0.6326, 0.3958, -0.6848, 0.1118, -0.1391, 0.4804, 0.9294, 0.1004, 0.2414, 0.2477, -0.8162, 1.2052, -0.6719, -0.47, -0.1946, -0.0606, 0.473, 0.0247, -0.3857, 1.1637, -0.6092, -0.5512, -0.2389, -0.2168, 0.1673, -0.4124, -0.1196, -0.7147, 1.1774, -0.8166, 0.1285, -0.3136, 0.4687, -0.5939, -0.4579, 0.1857, 0.049, -0.5936, -0.4554, -0.1878, 0.017],
        [0.0833, -0.0731, 0.298, 0.0085, -0.6858, 0.529, 0.887, 0.1772, -0.118, -0.7559, 0.1995, -0.6415, 0.3014, 0.2061, 0.9727, 0.9089, 0.1603, 0.3773, -0.146, -0.6429, 1.4808, -0.7797, -0.6061, -0.0854, -0.1324, 0.3183, 0.3378, -0.4552, 1.4929, -0.7543, -0.6089, -0.1906, -0.1892, 0.0628, -0.4675, -0.2478, -0.7632, 1.1876, -1.0734, -0.0954, -0.2896, 0.5757, -0.5601, -0.2595, 0.3831, 0.4729, -0.8736, -0.4378, -0.2519, 0.0448]
      ]
    }
    ```
  - Failed response example
    ```
    {
        "error_code": "NLP.0301",
        "error_msg": "argument valid error: sentence must not be blank and sentence length 1-512"
    }
    ```

Status Code

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

Error Code

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

4.1.9 Entity Linking

Introduction

This API is used to analyze the entity linking in texts of general domains and to identify and return entity information in the text.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format
  ```
  POST /v1/{project_id}/nlp-fundamental/entity-linking
  ```
- Parameter description

Table 4-34 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-35 describes the request parameters.

Table 4-35 Request parameters

Parameter	Type	Mandatory	Description
text	String	Yes	Text to be analyzed. The text is encoded using UTF-8 and contains 1 to 50 characters.
lang	String	No	Supported language type. Currently, only Chinese is supported. The default value is **zh**.

Response

Table 4-36 describes the response parameters.

Table 4-36 Response parameters

Parameter	Type	Description
entities	Array of entities	Entity linking result. For details, see Table 4-37.
error_code	String	Error code when the API fails to be called. For details, see Error Code. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Table 4-37 Entity data structure description

Parameter	Type	Description
mention	String	Entity mention
offset	Integer	Offset value
entity_title	String	Entity name

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/entity-linking

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

Request Body:
   {
"text":"Text for analysis,
   "lang":"zh"
   }
```

- Example response
  - Successful example response

```
{
   "entities": [
      {
         "mention": "word-1",
         "offset": 0,
         "entity_title": "word-1 (word-2, word-3)"
      },
      {
         "mention": "word-4",
         "offset": 4,
         "entity_title": "word-4 (word-1, word-5)"
      }
   ]
}
```

  - Failed example response

```
{
   "error_code": "NLP.0301",
   "error_msg": "argument valid error:text.text for entity-linking should between 1 and 50;"
}
```

Status Code

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

Error Code

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

4.1.10 Keyword Extraction

Introduction

This API is used to extract the keywords that best express the topic or meaning of the specified text.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format
  POST /v1/{project_id}/nlp-fundamental/keyword-extraction
- Parameter description

Table 4-38 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-39 describes the request parameters.

Table 4-39 Request parameters

Parameter	Type	Mandatory	Description
text	String	Yes	Text to be analyzed. The text is encoded using UTF-8 and contains 1 to 512 characters.
limit	int	No	Maximum number of returned keywords. The default value is **5**. If the number of words in the request text is less than the value of this parameter, the actual number of words is returned. If the number of words is a floating point number, this parameter is set to the integer rounded down the floating point number.
lang	String	No	Supported language type. Currently, only Chinese is supported. The default value is **zh**.

Response

Table 4-40 describes the response parameters.

Table 4-40 Response parameters

Parameter	Type	Description
words	Array of String	Keyword list

Parameter	Type	Description
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. This parameter is not included when the API is successfully called.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/keyword-extraction

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

Request Body:
   {
  "text": "Huawei is a leading global information and communications technology (ICT) solution provider. It focuses on the ICT field, adheres to robust operation, continuous innovation, and open cooperation, builds end-to-end solution advantages in telecom carriers, enterprises, devices, and cloud computing, provides competitive ICT solutions, products, and services for carriers, enterprises, and consumers, and is dedicated to enabling the future information society and building a better connected world.",
      "limit": 8,
      "lang": "zh"
   }
```

- Example response
  - Successful example response

```
{
   "words": [
      "Word 1",
      "ICT",
      "Word 2",
      "Word 3",
      "Word 4",
      "Word 5",
      "Word 6",
      "Word 7",
   ]
}
```

  - Failed example response

```
{
   "error_code": "NLP.0301",
   "error_msg": "argument valid error:lang.only support language:zh;"
}
```

Status Code

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

Error Code

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

4.1.11 Event Extraction

Introduction

This API is used to extract events of specified types and related entities from natural language text and generate structured data.

Five event types are supported, including conference, appointment, resignation, stock overweight, and stock underweight as well as related elements in financial notices.

This API is free of charge and can be called twice per second.

URI

- URI format
  POST /v1/{project_id}/nlp-fundamental/event-extraction
- Parameter description

Table 4-41 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-42 describes the request parameters.

Table 4-42 Request parameters

Parameter	Type	Mandatory	Description
text	String	Yes	Text to be analyzed. The text is encoded using UTF-8 and contains 1 to 256 characters.

Response

Table 4-43 describes the response parameters.

Table 4-43 Response parameters

Parameter	Type	Description
events	Array of events	Event extraction result For details, see **Table 4-44**.
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Table 4-44 Data structure description of **events**

Parameter	Type	Description
arguments	Array of arguments	List of elements in an event
role	String	Element role, which refers to the role that an element plays in an event. It is the semantic relationship between an element and an event.
span	List of Integer	Start and end positions of the entity text in the text to be analyzed
word	String	Entity text
event_trigger	String	Word that triggers an event, which best represents the occurrence of an event in the event description and determines key features of an event type
event_type	String	Event type
trigger_span	List of Integer	Start and end positions of the event trigger word in the text to be analyzed

Table 4-45 Event templates

Event Type	Template Element	Description
Conference	ORG	Company name
	Time	Time

Event Type	Template Element	Description
	Place	Place
	Name	Conference name
Appointment	ORG	Company name
	Person	Candidate
	Job	Post
	Time-Period	Term of office
Resignation	ORG	Company name
	Person	Person
	Job	Post
	Time	Time
Stock overweight	Obj	Stock issuer
	Sub	Subject (individuals or organizations)
	Time-Ending	Date
	Increasing-Num	Overweight shares
	Increasing-Rate	Overweight ratio
	After-Num	Shares after overweight
	After-Rate	Shareholding ratio after overweight
Stock underweight	Obj	Stock issuer
	Sub	Subject (individuals or organizations)
	Time-Ending	Date
	Decreasing-Num	Underweight shares
	Decreasing-Rate	Underweight ratio
	After-Num	Shares after underweight
	After-Rate	Shareholding ratio after underweight

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlp-fundamental/event-extraction

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



```
Request Body:
{
"text":"At the first meeting of the fifth Board of Directors of China XXX Co., Ltd. (hereinafter referred to as "the Company"), it was agreed to elect Huang XX as a member of the Audit Committee. The term of office of the Audit Committee shall be consistent with that of the current Board of Directors."
}
```

- Example response
  - Successful example response

```
{
"events": [
        {
           "argument": [
                 {
                  "role": "ORG",
                  "span": [0,11],
                  "word": "China XXX Co., Ltd."
                  },
                 {
                  "role": "Person",
                  "span": [40,43],
                  "word": "Huang XX"
                  },
                 {
                  "role": "Job",
                  "span": [44,51],
                  "word": "member of the Audit Committee"
                  },
                 {
                 "role": "Time-Period",
                 "span": [57,69],
                 "word": "The term of office of the Audit Committee shall be consistent with that of the current Board of Directors."
                  }
            ],
           "event_trigger": "elect",
          "event_type": "Appointment",
           "trigger_span": [36,38]
      }
   ]
}
```

  - Failed example response

```
{
  "error_code": "NLP.0301",
  "error_msg": "text should be between 1 to 256."
}
```

Status Code

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

Error Code

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

4.2 LG APIs

4.2.1 Text Summarization (Basic Edition)

Introduction

This API is used to generate summaries of texts.

Basic text summarization and domain-specific text summarization are implemented based on different algorithms, so the results for processing the same text are different. According to the test data, the effect of the domain-specific edition is better than that of the basic edition.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format
  POST /v1/{project_id}/nlg/summarization
- Parameter description

Table 4-46 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-47 describes the request parameters.

Table 4-47 Request parameters

Parameter	Type	Mandatory	Description
lang	String	No	Supported text language type. Currently, Chinese (**zh**) and English (**en**) are supported. The default value is **zh**.
title	String	No	Text title. Currently, the title is encoded using UTF-8. The text length ranges from 0 to 1,000 characters.

Parameter	Type	Mandatory	Description
content	String	Yes	Text body. Currently, the title is encoded using UTF-8. The text length ranges from 1 to 10,000 characters. **NOTE** The text language type must be consistent with the value of **lang**.
length_limit	Float	No	Length limit of the generated summary. • If the value of **length_limit** is greater than **1**, the returned result is the summary whose length is the closest to the value. • If the value of **length_limit** ranges from **0** to **1**, the returned result is the summary whose length percentage is closest to the value. The default value is **0.3**.

Response

Table 4-48 describes the response parameters.

Table 4-48 Response parameters

Parameter	Type	Description
summary	String	Summary result returned based on the text request body.
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlg/summarization

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

```
Request Body:
   {
      "length_limit":0.3,
"title":"Almost 600 plant species have become extinct in the last 250 years",
  "lang": "en",
  "content":" Almost 600 plant species have been wiped from the planet in the past 250 years, more than twice the number of bird, mammal and amphibian species that have met the same fate, according to a new study.The research -- published Monday in Nature, Ecology & Evolution journal -- found that 571 plant species have disappeared from the wild worldwide, and that plant extinction is occurring up to 500 times faster than the rate it would without human intervention.For comparison, the researchers said animal extinction is occurring at least 1,000 times faster than the normal rate of extinction, however the report notes that researchers believe the plant extinction rate has been underestimated. The Royal Botanic Gardens, Kew and Stockholm University researchers say it's the first time scientists have compiled a global overview of which plants have already become extinct. Most people can name a mammal or bird that has become extinct in recent centuries, but few can name an extinct plant, report co-author Aleys Humphreys said. Plants on islands, in the tropics and in Mediterranean climates had the highest rates of plant extinction, as these were areas home to unique species vulnerable to human activities. The study said the increase in the plant extinction rate could be due to the loss of habitat of species located in a small geographic area. Some examples of plants that have gone extinct in the past two centuries are the aromatic Chile sandalwood and the banded trinity, which has no leaves -- only its flowers are visible above the ground."
   }
```

- Example response
  - Successful response example

    ```
    {
       "summary": "Almost 600 plant species have been wiped from the planet in the past 250 years, more than twice the number of bird, mammal and amphibian species that have met the same fate, according to a new study.The research -- published Monday in Nature, Ecology & Evolution journal -- found that 571 plant species have disappeared from the wild worldwide, and that plant extinction is occurring up to 500 times faster than the rate it would without human intervention.For comparison, the researchers said animal extinction is occurring at least 1,000 times faster than the normal rate of extinction, however the report notes that researchers believe the plant extinction rate has been underestimated."
    }
    ```

  - Failed response example

    ```
    {
       "error_code": "NLP.3201",
       "error_msg": "parameter error."
    }
    ```

Status code

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

Error Code

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

4.2.2 Text Summarization (Domain-specific Edition)

Introduction

This API is used to train summarization models of a specific field based on corpus of that field, which can improve the text summarization effect.

Basic text summarization and domain-specific text summarization are implemented based on different algorithms, so the results for processing the same text are different. According to the test data, the effect of the domain-specific edition is better than that of the basic edition.

This API is free of charge and can be called twice per second.

URI

- URI format
  POST /v1/{project_id}/nlg/summarization/domain
- Parameter description

  Table 4-49 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

The following table describes the request parameters.

Table 4-50 Request parameters

Parameter	Mandatory	Type	Description
lang	No	String	Supported text language type. Currently, Chinese is supported. The default value is **zh**.
title	No	String	Text title. Currently, the title is encoded using UTF-8. The text length cannot exceed 1,000 characters.
content	Yes	String	Text body. Currently, the title is encoded using UTF-8. The text length cannot exceed 10,000 characters.
length_limit	No	Float	Length limit of the generated summary • If the value is greater than **1**, it is the number of characters in the summary. • If the value is between **0** and **1**, it is the percentage of the generated summary to the original length. The default value is **0.3**.
type	No	Integer	Supported domain type. Currently, only general domain is supported. The default value is **general**. **0**: general domain

Response

Table 4-51 describes the response parameters.

Table 4-51 Response parameters

Parameter	Type	Description
summary	String	Summary result returned based on the text request body.
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Example

The following example shows the generation of summaries from texts.

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlg/summarization/domain

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

Request Body:
   {
      "length_limit":0.3,
      "title":"Almost 600 plant species have become extinct in the last 250 years",
      "lang": "zh",
      "content":" Almost 600 plant species have been wiped from the planet in the past 250 years, more than twice the number of bird, mammal and amphibian species that have met the same fate, according to a new study.The research -- published Monday in Nature, Ecology & Evolution journal -- found that 571 plant species have disappeared from the wild worldwide, and that plant extinction is occurring up to 500 times faster than the rate it would without human intervention.For comparison, the researchers said animal extinction is occurring at least 1,000 times faster than the normal rate of extinction, however the report notes that researchers believe the plant extinction rate has been underestimated. The Royal Botanic Gardens, Kew and Stockholm University researchers say it's the first time scientists have compiled a global overview of which plants have already become extinct. Most people can name a mammal or bird that has become extinct in recent centuries, but few can name an extinct plant, report co-author Aleys Humphreys said. Plants on islands, in the tropics and in Mediterranean climates had the highest rates of plant extinction, as these were areas home to unique species vulnerable to human activities. The study said the increase in the plant extinction rate could be due to the loss of habitat of species located in a small geographic area. Some examples of plants that have gone extinct in the past two centuries are the aromatic Chile sandalwood and the banded trinity, which has no leaves -- only its flowers are visible above the ground."
      "type":0
   }
```

- Example response
  - Successful example response

```
{
   "Summary": "Almost 600 plant species have been wiped from the planet in the past 250 years, more than twice the number of bird, mammal and amphibian species that have met the same fate, according to a new study.The research -- published Monday in Nature, Ecology & Evolution journal -- found that 571 plant species have disappeared from the wild worldwide, and that plant extinction is occurring up to 500 times faster than the rate it would without
```

```
human intervention.For comparison, the researchers said animal extinction is occurring at least 1,000 times faster than the normal rate of extinction, however the report notes that researchers believe the plant extinction rate has been underestimated."
}
```

- Failed example response

```
{
    "error_code": "NLP.3104",
    "error_msg": "content is empty."
}
```

Status Code

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

Error Code

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

4.2.3 Poem Generation

Introduction

This API is used to generate a poem according to the user input.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format

```
POST /v1/{project_id}/nlg/poem
```

- Parameter description

Table 4-52 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

The following table describes the request parameters.

Table 4-53 Request parameters

Parameter	Mandatory	Type	Description
type	Yes	Integer	Poem type. The values are as follows: • **0**: five-character quatrain • **1**: seven-character quatrain • **2**: five-character octave • **3**: seven-character octave
title	Yes	String	Poem title. Only the Chinese title is supported currently and it is encoded using UTF-8. The text length ranges from 1 to 10 characters.
acrostic	No	Boolean	Acrostic. The values are as follows: • **true**: acrostic • **false**: not acrostic The default value is **false**.

Response

Table 4-54 describes the response parameters.

Table 4-54 Response parameters

Parameter	Type	Description
poem	Array[String]	Poem returned based on the text request body.
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Example

The following example shows the generation of a poem.

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlg/poem

Request Header:
    Content-Type: application/json
```

```
   X-Auth-Token:
MIINRwYJKoZIhvcNAQcCoIINODCCDTQCAQExDTALBglghkgBZQMEAgEwgguVBgkqhkiG...

Request Body:
   {
      "type": 3,
      "title": "keyword-1",
      "acrostic":true
   }
```

- Example response
  - Successful example response

    ```
    {
       "poem": [
          "keyword-1",
          "sentence-1",
          "sentence-2",
          "sentence-3",
          "sentence-4"
       ]
    }
    ```

  - Failed example response

    ```
    {
       "error_code": "NLP.3104",
       "error_msg": "poem_type is null or empty."
    }
    ```

Status Code

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

Error Code

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

4.2.4 Text Generation

Introduction

This API is used to generate text based on the document and input data.

Before using this API, customize a document. For more details, see **Text Generation** in the *Natural Language Processing User Guide*.

URI

- URI format

  ```
  POST /v1/{project_id}/nlg/data2doc/document/generation
  ```

- Parameter description

Table 4-55 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-56 describes the request parameters.

Table 4-56 Request parameters

Parameter	Mandatory	Type	Description
group_name	Yes	String	Name of a project. The value contains 2 to 50 characters and only letters, digits, underscores (_), and hyphens (-) are allowed. A project must contain valid documents on the text generation console.
document_name	Yes	String	Name of a document in a project. The value contains 2 to 50 characters and only letters, digits, underscores (_), and hyphens (-) are allowed. A document must be valid and customized on the text generation console.
data	Yes	Json	Data you enter for generating text. It must be in JSON format. The data must be consistent with the data item in the custom document.

Response

Table 4-57 describes the response parameters.

Table 4-57 Response parameters

Parameter	Type	Description
title	String	Title of the generated text
content	String	Content of the generated text
error_code	String	Error code when the API fails to be called. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Example

This following example shows how to generate text.

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlg/data2doc/document/generation

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

Request Body:
   {
      "group_name": "Project 01",
      "document_name": "Document 01",
      "data": {
         "date": "2019-12-1",
         "max_temperature": "16°",
         "min_temperatrue": "3°"
      }
   }
```

- Example response
  - Successful example response

```
{
   "title": "Weather forecast",
   "content": "Today is December 1, 2019. The highest temperature is 16°C and the lowest temperature is 3°C. Today's temperature is suitable for travel."
}
```

  - Failed example response

```
{
   "error_code": "NLP.3201",
   "error_msg": "group project 01 does not exist."
}
```

Status Code

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

Error Code

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

4.3 LU APIs

4.3.1 Sentiment Analysis (Basic Edition)

Introduction

This API is used to analyze user comments in general fields.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format
  POST /v1/{project_id}/nlu/sentiment
- Parameter description

  Table 4-58 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-59 describes the request parameters.

Table 4-59 Request parameters

Parameter	Type	Mandatory	Description
content	String	Yes	Text to be analyzed. The text must be encoded using UTF-8. The value contains a maximum of 400 characters. If the value exceeds 400 characters, only the first 400 characters are detected. Chinese is supported currently.
type	Integer	No	This parameter is reserved and is not used currently. Only general sentiment analysis is currently supported.

Response

Table 4-60 describes the response parameters.

Table 4-60 Response parameters

Parameter	Type	Description
result	Result object	Sentiment information returned when the API is successfully called. This parameter is not included when the API call fails. For details, see **Table 4-61**.

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

Table 4-61 Data structure description of the **result** field

Parameter	Type	Description
content	String	Text to be analyzed.
label	Integer	Positive and negative labels. • 1: positive • 0: negative
confidence	Float	Confidence level of the labels.

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlu/sentiment

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

Request Body:
   {
      "content": "Text for analysis"
   }
```

- Example response
  - Successful response example

```
{
   "result": {
         "content":"Text for analysis",
      "label": 0,
      "confidence": 0.90706205
   }
}
```

  - Failed response example

```
   "error_code": "NLP.0101",
   "error_msg": "Authentication failed. Please verify the token"
}
```


Status code

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

Error Code

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

4.3.2 Sentiment Analysis (Domain-specific Edition)

Introduction

This API is used to analyze user comments in e-commerce, automotive industries, and other unknown domains.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format
  POST /v1/{project_id}/nlu/sentiment/domain
- Parameter description

  Table 4-62 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-63 describes the request parameters.

Table 4-63 Request parameters

Parameter	Type	Mandatory	Description
content	String	Yes	Text to be analyzed. The text must be encoded using UTF-8. Chinese is supported currently. • If **type** is set to **0** (domain adaptation), or **1** (e-commerce), the value contains a maximum of 200 characters. If the value exceeds 200 characters, only the first 200 characters are detected. • If **type** is set to **2** (automotive), the value contains a maximum of 400 characters. If the value exceeds 400 characters, only the first 400 characters are detected.
type	Integer	No	The default value is **0**. The options are as follows: **0**: domain adaptation. The system automatically identifies the domain based on the input content. **1**: e-commerce, which can be applied as comments in the e-commerce industry. **2**: automotive, which can be applied as comments in the automotive industry.

Response

Table 4-64 describes the response parameters.

Table 4-64 Response parameters

Parameter	Type	Description
result	Result object	Sentiment information returned when the API is successfully called. This parameter is not included when the API fails to be called. For details, see **Table 4-65**.
error_code	String	Error code returned when the API fails to be called. The parameter is not included when the API call succeeds.

Parameter	Type	Description
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Table 4-65 Data structure description of the **result** field

Parameter	Type	Description
content	String	Text to be analyzed
label	Integer	Positive and negative labels • **1**: positive • **0**: negative
confidence	Float	Confidence level of the labels

Examples

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlu/sentiment/domain

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

Request Body:
   {
         "content":"Text for analysis",
      "type": 2
   }
```

- Example response
  - Successful example response

```
{
   "result": {
         "content":"Response",
      "label": 1,
      "confidence": 0.96399385
   }
}
```

  - Failed example response

```
{
   "error_code": "NLP.0101",
   "error_msg": "Authentication failed. Please verify the token"
}
```

Status Code

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

Error Code

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

4.3.3 Text Classification

Introduction

This API is used to automatically classify and determine whether a text is an advertisement.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format
  POST /v1/{project_id}/nlu/classification
- Parameter description

Table 4-66 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-67 describes the request parameters.

Table 4-67 Request parameters

Parameter	Type	Mandatory	Description
content	String	Yes	Text to be analyzed. The text is encoded using UTF-8 and the value contains a maximum of 400 characters. If the value exceeds 400 characters, only the first 400 characters are detected. Only Chinese is currently supported.
domain	Integer	No	The default value is **1**. Currently, only advertisement detection is supported. 1: Advertisement detection

Response

Table 4-68 describes the response parameters.

Table 4-68 Response parameters

Parameter	Type	Description
result	Result object	Sentiment information returned when the API is successfully called. This parameter is not included when the API call fails. For details, see Table 4-69.
error_code	String	Error code returned when the API fails to be called. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Table 4-69 Data structure description of the **result** field

Parameter	Type	Description
content	String	Text to be analyzed.
label	Integer	Positive and negative labels. • **1**: advertisement • **0**: non-advertisement
confidence	Float	Confidence level of the labels.

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlu/classification

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

Request Body:
   {
    "content":"XXX Anti-Dandruff Shampoo, free delivery within the country",
      "domain":1
   }
```

- Example response
  - Successful response example
    ```
    {
       "result": {
        "content":"XXX Anti-Dandruff Shampoo, free delivery within the country",
           "label": 1,
           "confidence": 0.74237967
       }
    }
    ```
  - Failed response example
    ```
    {
       "error_code": "NLP.0101",
       "error_msg": "Authentication failed. Please verify the token"
    }
    ```

Status code

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

Error Code

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

4.3.4 Intent Understanding

Introduction

This API is used to identify user's intent in content related to weather, time, news, joke, translation, note, alarm and music. It identifies a specific domain from user's questions and statements and extracts entities contained in the domain.

For details about endpoints, see **Endpoints**.

Calling NLP APIs will incur fees. NLP packages are classified into the basic and domain-specific editions. When purchasing a package, view the APIs supported by the basic package and domain-specific packages in the **Natural Language Processing Price Calculator**.

URI

- URI format
  ```
  POST /v1/{project_id}/nlu/semantic-parser
  ```
- Parameter description

Table 4-70 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-71 describes the request parameters.

Table 4-71 Request parameters

Parameter	Type	Mandatory	Description
text	String	Yes	Text list to be analyzed. The text is encoded using UTF-8 and the value contains a maximum of 32 characters. If the value exceeds 32 characters, only the first 32 characters are detected.
lang	String	No	Supported language type. Currently, only Chinese is supported. The default value is **zh**.

Response

Table 4-72 Response parameters

Parameter	Type	Description
result	Result object	Intent information returned when the API is successfully called. This parameter is not included when the API fails to be called. For details, see **Table 4-73**.
error_code	String	Error code returned when the API fails to be called. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Table 4-73 Data structure description of **result**

Parameter	Type	Description
text	String	Text to be analyzed
label	String	Intent label of the text to be analyzed. Labels are classified into the following types: weather, time, news, joke, translation, notification, alarm, music, and others.
confidence	Float	Confidence level of a label

Parameter	Type	Description
slots	Array of slot	Data structure of **slots**. For details, see **Table 4-74**.

Table 4-74 Data structure description of **slots**

Parameter	Type	Description
word	String	Entity text
tag	String	Entity type. The entity types supported by each intent category are: weather: date, time, location time: location, timezone news: genre joke: genre translation: content notification: content, date, time, singer alarm: date, time music: singer, song, content
offset	Integer	Start position of the entity text in the text to be analyzed
length	Integer	Length of an entity text
normalized_word	String	Synonym or other normalized word. The default value is the original word.

Examples

- Example request

```
POST https://{endpoint}/v1/{project_id}/nlu/semantic-parser

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

Request Body:
   {
         "text":"Text for analysis",
      "lang":"zh"
   }
```

- Example response
  - Successful example response

```
{
   "result": {
      "confidence": 1,
      "label": "music",
      "slots": [
```



```
            {
                "length": 3,
                "normalized_word": "word-1",
                "offset": 3,
                "tag": "singer",
                "word": "word-1",
            },
            {
                "length": 3,
                "normalized_word": "word-2",
                "offset": 7,
                "tag": "song",
                "word": "word-2"
            }
        ],
        "text": "Response"
    }
}
```

– Failed example response

```
{
    "error_code": "NLP.0101",
    "error_msg": "Authentication failed. Please verify the token"
}
```

Status Code

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

Error Code

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

4.4 MT APIs

4.4.1 Text Translation

Introduction

This API is used to translate text, which is to convert text from the source language to text in the target language.

The text translation API belongs to MT APIs. Currently, MT is in commercial use. Therefore, calling MT APIs will incur fees. You can learn about the pricing details in **NLP Price Calculator**.

For details about text translation endpoints, see **Endpoints**.

URI

- URI format
  POST /v1/{project_id}/machine-translation/text-translation
- Parameter description

Table 4-75 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-76 describes the request parameters.

Table 4-76 Request parameters

Parameter	Type	Mandatory	Description
text	String	Yes	It is encoded using UTF-8. The text length cannot exceed 2,000 characters. Chinese characters, letters, and punctuation marks are all characters.
from	String	Yes	Source language to be translated. For details about specific values, see the following table.
to	String	Yes	Target language that is translated into. For details about its values, see the following table.
scene	String	No	The default value is **common**. Currently, only common scenarios are supported.

Table 4-77 Supported languages

Language	Description
zh	Chinese
en	English
ja	Japanese
ru	Russian
auto	The system automatically detects the input language and translates it to the target language. You need to specify the target language.

Response

Table 4-78 describes the response parameters.

Table 4-78 Response parameters

Parameter	Type	Description
src_text	String	Translation of the source text when the API call succeeds. It is encoded using UTF-8. This parameter is not included when the API fails to be called.
translated_text	String	Calling result when the API call succeeds. It is encoded using UTF-8 This parameter is not included when the API fails to be called.
from	String	Source language when the API call succeeds (if the source language is set to **auto**, the language detection result is displayed). It is encoded using UTF-8. This parameter is not included when the API fails to be called.
to	String	Target language when the API call succeeds. It is encoded using UTF-8. This parameter is not included when the API fails to be called.
error_code	String	Error code when the API call fails. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Examples

- Example request

```
POST https://{endpoint}/v1/{project_id}/machine-translation/text-translation

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

Request Body:
   {
      "text": "Text to translate",
      "from": "zh",
      "to": "en",
```

```
    "scene":"common"
  }
```

- Successful example response

```
{
  "src_text": "Text to translate",
  "translated_text": "Welcome to use machine translation services",
  "from": "zh",
  "to": "en"
}
```

- Failed example response

```
{
  "error_code": "NLP.0101",
  "error_msg": "Authentication failed. Verify the token."
}
```

Status Code

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

Error Code

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

4.4.2 Language Detection

Introduction

This API is used to determine which language is used in the input document. It evaluates text input for each document and returns the language type.

The language detection API belongs to MT APIs. Currently, MT is in commercial use. Therefore, calling MT APIs will incur fees. You can learn about the pricing details in **NLP Price Calculator**.

For details about text translation endpoints, see **Endpoints**.

URI

- URI format

```
POST /v1/{project_id}/machine-translation/language-detection
```

- Parameter description

Table 4-79 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-80 describes the request parameters.

Table 4-80 Request parameters

Parameter	Type	Mandatory	Description
text	String	Yes	Text to be detected. It is encoded using UTF-8. The text length cannot exceed 2,000 characters. Chinese characters, letters, and punctuation marks are all characters.

Table 4-81 Supported languages

Language	Acronym and Abbreviation
Chinese	zh
English	en
Russian	ru
Japanese	ja
German	de
French	fr
Spanish	es
Portuguese	pt
Italian	it
Turkish	tr
Arabic	ar
Korean	ko
Thai	th
Malay	ms
Vietnamese	vi

Response

Table 4-82 describes the response parameters.

Table 4-82 Response parameters

Parameter	Type	Description
detected_language	String	Calling result when the API call succeeds. It is encoded using UTF-8. If the input text is too short or the meaning is unclear, the detection result may be inaccurate. If the input text contains multiple languages, the language with the highest percentage is returned. This parameter is not included when the API fails to be called.
error_code	String	Error code when the API call fails. For details, see **Error Code**. The parameter is not included when the API call succeeds.
error_msg	String	Error message returned when the API fails to be called. The parameter is not included when the API call succeeds.

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/machine-translation/language-detection

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

Request Body:
    {
"text": "Welcome to use the Machine Translation service."
    }
```

- Successful example response

```
{
    "detected_language": "en"
}
```

- Failed example response

```
{
    "error_code": "NLP.0101",
    "error_msg": "Authentication failed. Verify the token."
}
```

Status Code

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

Error Code

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

4.4.3 Document Translation Job Creation

Introduction

Translating documents takes a long time, so the translation process is asynchronous. That is, two APIs are involved, API for creating translation jobs (job creation API) and API for querying job status (job status query API).

After the job creation API is called and returns the result, you can call the job status query API to obtain the translation status and temporary URL. You can use the temporary URL to download translated documents. Each temporary URL keeps valid for 10 minutes. The translation result is stored for 24 hours (starting from the time when the translation is completed). If you access the result after 24 hours, an error message indicating **task id is not found** is returned.

The document translation API belongs to MT APIs. Currently, MT is in commercial use. Therefore, calling MT APIs will incur fees. You can learn about the pricing details in **NLP Price Calculator**.

The job creation API is used to create and submit a document translation job. Documents to be translated are stored in an OBS bucket. To call this API, you must have the permission to read the OBS bucket. For details about the configurations, see **Configuring Access Permissions of OBS**.

For details about document translation endpoints, see **Endpoints**.

URI

- URI format
  POST /v1/{project_id}/machine-translation/file-translation/jobs
- Parameter description

  Table 4-83 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

Request

Table 4-84 describes the request parameters.

Table 4-84 Request parameters

Parameter	Type	Mandatory	Description
url	String	Yes	Path of the document stored on OBS. You are advised to use the temporarily authorized URL to download private documents. For details about how to obtain the document URL on OBS and the temporarily authorized URL, see **Configuring Access Permissions of OBS**. The region of OBS must be the same as that of the requested service. Otherwise, OBS is unavailable, even if it allows public access. The name of the document stored on OBS must be letters.
from	String	Yes	Source language. Currently, Chinese and English are supported.
to	String	Yes	Target language. Currently, Chinese and English are supported.
type	String	Yes	Document format. Currently, **docx**, **pptx**, and **txt** files can be translated.

Table 4-85 Supported languages

Language (from)	Language (to)	Description
zh	en	Translation from Chinese to English
en	zh	Translation from English to Chinese

Response

Table 4-86 describes the response parameters.

Table 4-86 Response parameters

Parameter	Type	Description
job_id	String	ID of the job to be created. This parameter is mandatory when a job is successfully created. This parameter is not included when a job fails to be created.
error_code	String	For details, see the error code list. This parameter is not included when the API is successfully called.
error_msg	String	Returned error message. This parameter is not included when the API is successfully called.

Example

- Example request

```
POST https://{endpoint}/v1/{project_id}/machine-translation/file-translation
Request Header:
   Content-Type:application/json
   X-Auth-Token:
MIINRwYJKoZIhvcNAQcCoIINODCCDTQCAQExDTALBglghkgBZQMEAgEwgguVBgkqhkiG...

Request Body:
   {
      "url": "https://****.obs.cn-north-4.huawei.com/***.docx",
      "from": "zh",
      "to": "en",
      "type":"docx"
   }
```

- Successful example response

```
{
   "job_id": "567e6536-****-****-****-826321939656"
}
```

- Failed example response

```
{
   "error_code": "NLP.0101",
   "error_msg": "Authentication failed. Verify the token."
}
```

4.4.4 Document Translation Job Status Query

Introduction

This API is used to obtain the document translation job status and temporary URL. The temporary URL can be used to obtain the translated document. Each temporary URL keeps valid for 10 minutes.

URI

- URI format

```
GET /v1/{project_id}/machine-translation/file-translation/jobs/{job_id}
```

- Parameter description

Table 4-87 URI parameters

Parameter	Mandatory	Description
project_id	Yes	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.
job_id	Yes	Document translation job ID, which can be obtained in **Document Translation Job Creation**

Request

N/A

Response

Table 4-88 describes the response parameters.

Table 4-88 Response parameters

Parameter	Type	Description
status	String	Current translation status. Possible values are as follows: • **WAITING**: The file is waiting to be translated. • **BGEIN**: The translation starts. • **FINISHED**: The translation is completed. • **ERROR**: An error occurred during the translation process.
url	String	Temporary URL. You can make a GET request to download the translation result. The URL keeps valid for 10 minutes. After the URL expires, call the API again to obtain a new URL.
error_code	String	For details, see the error code list. This parameter is not included when the translation job succeeds.
error_msg	String	Returned error message. This parameter is not included when the translation job succeeds.

Example

- Example request

```
GET https://{endpoint}/v1/{project_id}/machine-translation/file-translation/567e6536-****-****-****-826321939656

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


- Successful example response

```
{
    "status": "FINISHED",
    "url": "https://****.obs.****.huawei.com:443/****?AccessKeyId=****&Expires=****&Signature=*****"
}
```

- Failed example response

```
{
    "error_code": "NLP.0101",
    "error_msg": "Authentication failed. Verify the token."
}
```


5 Data Structure

5.1 Common Request Parameters

Table 5-1 Common request headers

Parameter	Description	Mandatory	Example
Content-type	MIME type of the sent response body.	Yes	application/json
Content-Length	Length of the request body. The unit is byte.	This parameter is optional for POST or PUT requests and not required for GET requests.	3495
X-Auth-Token	User token.	Yes	MIINRwYJKoZIhvcNAQcCoIINODCCDTQCAQExDTALBglghkgBZQMEAgEwgguVBgkqhkiG...
X-Language	Request language type.	No. The default value is **zh-cn**.	en-us

NOTE

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

5.2 Common Response Parameters

Table 5-2 Common response headers

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 sent response body.

6 Appendix

6.1 Status Code

- Normal

  200
- Exception

Return Value	Description
400 Bad Request	Request error. For details about the returned error code, see **Error Code**.
401 Unauthorized	Authentication failed.
403 Forbidden	No operation permission.
500 Internal Server Error	Failed to complete the request because of an internal service error.
503 Service Unavailable	Service unavailable.

6.2 Error Code

If an error occurs during API calling, no result is returned. You can locate the cause of an error using the error code of each API. When an API call fails, HTTPS status code 4*xx* or 5*xx* is returned. The returned message body contains a specific error code and error message. If you fail to locate the cause of the error, contact HUAWEI CLOUD customer service and provide the error code for troubleshooting.

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

Table 6-1 describes error codes of NLP. For the error codes of ModelArts, see **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	NLP.0000	You do not have the OBT permission.	Apply for open beta test permission according to the prompts.
401	NLP.0101	Authentication failed.	Correct the token ID and try again.
401	NLP.0102	Authentication information is missing.	Correct the authentication information and try again.
401	NLP.0103	Failed to obtain the authentication information.	Correct the token ID and try again.
401	NLP.0104	Failed to connect to the IAM server.	Contact the IAM service administrator.
401	NLP.0105	The account balance is insufficient or the account is in arrears.	Top up the account as soon as possible.
400	NLP.0301	Request parameter error occurs.	Correct the field names in the request parameters and try again.
400	NLP.0302	The request parameter is incorrect or empty.	Correct the request parameter settings and try again.
400	NLP.0303	The HTTP request method is not supported.	Check the request mode, correct the request, and try again.
400	NLP.0304	Failed to read HTTP message.	Check the request format, correct the request, and try again.

Status Code	Error Code	Error Message	Solution
400	NLP.0305	The HTTP media mode is not supported.	Check the media mode of the request, correct the request, and try again.
500	NLP.0306	The HTTP request timed out.	Service backend error. Please contact technical support.
500	NLP.0201	The internal service is abnormal.	Service backend error. Please contact technical support.
500	NLP.0401	The OBS Client is empty.	Service backend error. Please contact technical support.
500	NLP.0402	Failed to close the OBS Client.	Service backend error. Please contact technical support.
500	NLP.0403	Failed to upload files to OBS.	Service backend error. Please contact technical support.
500	NLP.0404	Failed to access OBS.	Service backend error. Please contact technical support.
500	NLP.0405	Failed to download files from OBS.	Service backend error. Please contact technical support.
500	NLP.1101	Failed to deliver the service.	Service backend error. Please contact technical support.
500	NLP.1102	Parameter parsing error returned by the service.	Service backend error. Please contact technical support.
500	NLP.1201	Failed to buy a package.	Service backend error. Please contact technical support.
400	NLP.1202	The product cannot be subscribed to.	The product cannot be subscribed to currently. Please subscribe to another product.
400	NLP.1203	The account is in arrears.	Top up the account and try again.
500	NLP.2101	Word segmentation internal error.	Service backend error. Please contact technical support.
500	NLP.2201	NER internal error.	Service backend error. Please contact technical support.
500	NLP.3102	Failed to load the file.	Service backend error. Please contact technical support.
400	NLP.3201	Incorrect parameter.	Service backend error. Please contact technical support.

Status Code	Error Code	Error Message	Solution
500	NLP.3202	Failed to parse the template.	Service backend error. Please contact technical support.
500	NLP.3203	Incorrect formula.	Service backend error. Please contact technical support.
500	NLP.3204	The template resource does not exist.	Service backend error. Please contact technical support.
500	NLP.4101	The file is empty or does not exist.	Service backend error. Please contact technical support.
500	NLP.4201	An exception occurred when calling internal services of LU.	Service backend error. Please contact technical support.
500	NLP.4302	An error occurred during internal data parsing.	Service backend error. Please contact technical support.
500	NLP.5101	Failed to load Word2vec.	Service backend error. Please contact technical support.
500	NLP.5102	The format of Word2vec is incorrect.	Service backend error. Please contact technical support.
400	NLP.5301	The text domain to be analyzed is not in the specified domain range.	Check the **domain** field in the request.
500	NLP.6101	Internal error in the MT service.	Contact the service administrator.
400	NLP.6201	The translation direction or scenario is not supported.	Check whether the target language, source language or translation scenario is supported.
400	NLP.6202	Failed to recognize the language type.	Check whether the language type of the input text is correct.
500	NLP.6203	Failed to translate.	Check whether the target text is correct.
400	NLP.6301	The character length is too long.	Check that the length of the source text is less than 1,000 characters.

Status Code	Error Code	Error Message	Solution
400	NLP.6302	Access volume reaches the upper limit.	Try again later.
400	NLP.6303	Failed to obtain files from the OBS bucket.	Check whether the OBS bucket is in the public-read status.
400	NLP.6304	The job does not exist.	Check whether the entered job ID is incorrect or the job has expired.
400	NLP.6305	The document format is not supported.	Check whether the document format is correct in the **type** field.
400	NLP.6306	Invalid file.	Check whether the file is empty or the file size is 0 byte.
400	NLP.6307	The number of document pages exceeds the upper limit.	Reduce the number of pages in the document. The upper limit is 250.
500	NLP.6308	The job timed out.	Try again.
400	ModelArts.0203	Invalid token.	Invalid token. Check whether the token is correct.
400	ModelArts.4101	The token is empty.	The token is empty. The HTTP request header does not contain the token request authentication information of **x-auth-token**. Check the request.
400	ModelArts.4102	Failed to parse the token.	Failed to parse the token. The token request authentication information of **x-auth-token** in the HTTP request header is incorrect. Check the sent request and token.

Status Code	Error Code	Error Message	Solution
400	ModelArts.4103	Invalid token.	Invalid token. The token request authentication information of **x-auth-token** in the HTTP request header is incorrect. Check the sent request and token.
400	ModelArts.4104	The length of the request body is invalid.	The length of the request body is invalid. Check the request body length.
400	ModelArts.4105	The JSON format of the request body is incorrect.	The JSON format of the request body is incorrect. Check the JSON format of the request body.
400	ModelArts.4106	The account is restricted.	The account is restricted. Check the user's resources. For details about the account restriction reason, see **My Account FAQ** in **Help Center**.
400	ModelArts.4107	An exception occurred when obtaining the temporary AK/SK.	An exception occurred when obtaining the temporary AK/SK. Please contact technical support.
400	ModelArts.4201	The request URL does not contain the service ID.	The request URL does not contain the service ID. Check the service ID in the request URL.
400	ModelArts.4202	The request URL format is invalid.	The request URL format is invalid. Check the request URL format.
400	ModelArts.4203	Access permission is unavailable.	Access permission is unavailable. Check the access permission.

Status Code	Error Code	Error Message	Solution
400	ModelArts.4204	The API is not subscribed to.	The API is not subscribed to. Subscribe to the API. If the service has been enabled, check whether the region (or account) where the service is enabled is the same as the region (or account) where the service is called. If they are the same, check whether the URL of the API is spelled correctly.
400	ModelArts.4601	The external URL is invalid.	The external URL is invalid. Check the format of the entered download address.
400	ModelArts.4603	Failed to download files from the external URL.	Failed to download files from the external URL. Check the network and URL.
400	ModelArts.4702	Failed to query the OBS agency.	Failed to query the OBS agency. Check whether the OBS agency has been enabled for the service.
400	ModelArts.4703	The OBS URL is invalid.	The OBS URL is invalid. Check the OBS URL.
400	ModelArts.4704	Failed to obtain the OBS file.	Failed to obtain the OBS file. Check the OBS file.
400	ModelArts.4705	The OBS file is oversized.	The OBS file is oversized. Check the size of the OBS file and ensure that the file does not exceed the size limit.
400	ModelArts.4706	The OBS file does not exist.	The OBS file does not exist. Check whether the corresponding file exists.

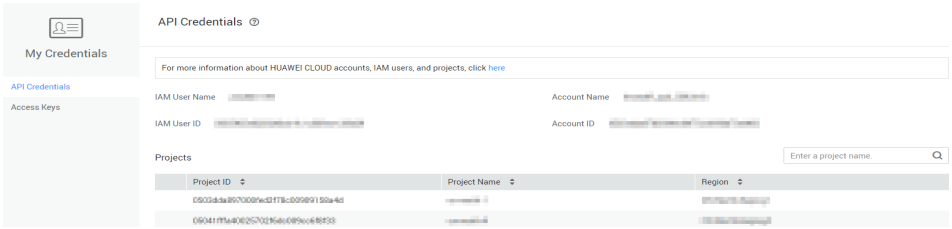
6.3 Obtaining a Project ID

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 click **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



If there are multiple projects, unfold the target region and obtain the project ID from the **Project ID** column. The project ID must be the same as that of the NLP endpoint. For example, if you want to access the endpoint of CN North-Beijing4 (**nlp-ext.cn-north-4.myhuaweicloud.com**), the project is **cn-north-4**.

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. If NLP is deployed in the **cn-north-4**the value of **name** in the request body is **cn-north-4**, and the value of **id** in **projects** is the project ID.

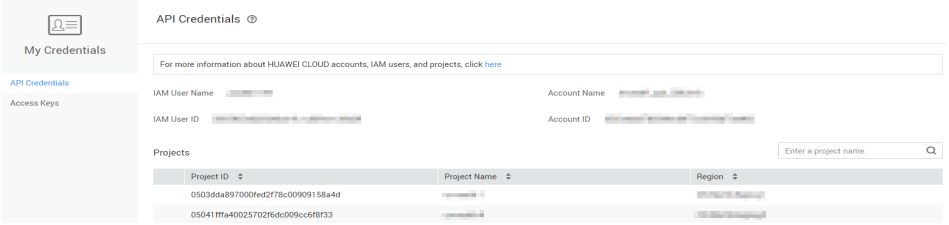
```
{
    "projects": [
        {
            "domain_id": "65382450e8f64ac0870cd180d14e684b",
            "is_domain": false,
            "parent_id": "65382450e8f64ac0870cd180d14e684b",
            "name": "project_name",
            "description": "",
            "links": {
                "next": 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 an Account ID

An account ID (domain-id) is required for some URLs when an API is called.

1. Log in to the management console after registration.
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



6.5 Configuring Access Permissions of OBS

OBS

OBS provides massive, secure, reliable, and cost-effective data storage capabilities for users to store data of any type and size.

Multimedia files such as images and voice files in the Enterprise Intelligence (EI) services can be directly processed by HUAWEI CLOUD OBS. This reduces service usage costs, shortens service response time, and improves service experience.

For data security purposes, NLP cannot directly obtain the user data. To obtain the user data, you need to enable the public read authentication.

Enabling Public Read Authorization

If public read authorization is enabled, data is visible and accessible to all users across the entire network. This method is not recommended for private data. The data privacy and expiration time cannot be guaranteed using this method.

To do so, configure the bucket policy to **Public Read**. For details about how to configure the public read policy, see **Configuring a Standard Bucket Policy**.

Only OBS links belonging to your own account can be used. Public-read OBS links of other users are not supported.

Using a Temporarily Authorized URL

Sensitive information, such as private data, may be disclosed. In this case, you are advised to use a temporarily authorized URL to access private files.

The temporary URL has a validity period. Use the temporary URL in its validity period.

For details about how to upload a file and obtain a temporary URL, see the following code:

```
String endPoint = "http://your-endpoint";
String ak = "*** Provide your Access Key ***";
String sk = "*** Provide your Secret Key ***";
//Create an ObsClient.
```



```
obsClient = new ObsClient(ak, sk, endPoint);
// Specify the validity period of the URL to 3,600 seconds.
longexpireSeconds = 3600L;
obsClient.putObject("bucketname", "objectname", new File("localfile"));
TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.GET,
expireSeconds);
request.setBucketName("bucketname");
request.setObjectKey("objectname");
// Obtain a temporary URL. The format of the URL is as follows:
// https://****.obs.cn-north-4.huawei.com/***.docx?AccessKeyId=***&Expires=***Signature=***
TemporarySignatureResponse response = obsClient.createTemporarySignature(request);
System.out.println("\t" + response.getSignedUrl());
```

Uploading a Document

For details about how to upload a document, see **Uploading an Object**.

Obtaining the Document URL

For details about how to obtain the document URL, see **How Do I Obtain the Object URL?**.

7 Change History

Released On	Description
2020-08-03	Added: • **Event Extraction**
2020-07-06	Modified: • **NER (Domain-specific Edition)**
2019-12-13	Added sections: • **Poem Generation** • **Text Generation** • **Intent Understanding** • **Document Translation Job Creation** • **Document Translation Job Status Query** • **Configuring Access Permissions of OBS**
2019-08-05	Added sections: • **NER (Domain-specific Edition)** • 4.3.4-Intent Understanding (Deprecated) Deleted section: • Entity Linking
2019-07-08	Added contents about MT. • **Before You Start** • **API Overview** • **MT APIs** • **Error Code**
2019-06-28	Updated error codes.

Released On	Description
2019-03-22	• Added new APIs. For details, see the following sections: **Text Similarity (Basic Edition)** **Sentence Vector** • Changed the old API in the following section to the deprecated API: Sentence Vector (Deprecated)
2019-01-30	The issue is the first official release.

