Alibaba Cloud
Aliyun Container for Kubernetes

Developer Guide

Issue: 20190414

Legal disclaimer

Alibaba Cloud reminds you to carefully read and fully understand the terms and conditions of this legal disclaimer before you read or use this document. If you have read or used this document, it shall be deemed as your total acceptance of this legal disclaimer.

1. **You shall download and obtain this document from the Alibaba Cloud website or other Alibaba Cloud-authorized channels, and use this document for your own legal business activities only. The content of this document is considered confidential information of Alibaba Cloud. You shall strictly abide by the confidentiality obligations. No part of this document shall be disclosed or provided to any third party for use without the prior written consent of Alibaba Cloud.**
2. **No part of this document shall be excerpted, translated, reproduced, transmitted, or disseminated by any organization, company, or individual in any form or by any means without the prior written consent of Alibaba Cloud.**
3. **The content of this document may be changed due to product version upgrades , adjustments, or other reasons. Alibaba Cloud reserves the right to modify the content of this document without notice and the updated versions of this document will be occasionally released through Alibaba Cloud-authorized channels. You shall pay attention to the version changes of this document as they occur and download and obtain the most up-to-date version of this document from Alibaba Cloud-authorized channels.**
4. **This document serves only as a reference guide for your use of Alibaba Cloud products and services. Alibaba Cloud provides the document in the context that Alibaba Cloud products and services are provided on an "as is", "with all faults " and "as available" basis. Alibaba Cloud makes every effort to provide relevant operational guidance based on existing technologies. However, Alibaba Cloud hereby makes a clear statement that it in no way guarantees the accuracy, integrity , applicability, and reliability of the content of this document, either explicitly or implicitly. Alibaba Cloud shall not bear any liability for any errors or financial losses incurred by any organizations, companies, or individuals arising from their download, use, or trust in this document. Alibaba Cloud shall not, under any circumstances, bear responsibility for any indirect, consequential, exemplary, incidental, special, or punitive damages, including lost profits arising from the use**

or trust in this document, even if Alibaba Cloud has been notified of the possibility of such a loss.

5. By law, all the content of the Alibaba Cloud website, including but not limited to works, products, images, archives, information, materials, website architecture, website graphic layout, and webpage design, are intellectual property of Alibaba Cloud and/or its affiliates. This intellectual property includes, but is not limited to, trademark rights, patent rights, copyrights, and trade secrets. No part of the Alibaba Cloud website, product programs, or content shall be used, modified, reproduced, publicly transmitted, changed, disseminated, distributed, or published without the prior written consent of Alibaba Cloud and/or its affiliates. The names owned by Alibaba Cloud shall not be used, published, or reproduced for marketing, advertising, promotion, or other purposes without the prior written consent of Alibaba Cloud. The names owned by Alibaba Cloud include, but are not limited to, "Alibaba Cloud", "Aliyun", "HiChina", and other brands of Alibaba Cloud and/or its affiliates, which appear separately or in combination, as well as the auxiliary signs and patterns of the preceding brands, or anything similar to the company names, trade names, trademarks, product or service names, domain names, patterns, logos, marks, signs, or special descriptions that third parties identify as Alibaba Cloud and/or its affiliates).
6. Please contact Alibaba Cloud directly if you discover any errors in this document.

Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
	This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 Warning: Restarting will cause business interruption. About 10 minutes are required to restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus , page names, and other UI elements.	Click OK.
`Courier font`	It is used for commands.	Run the `cd / d C :/ windows` command to enter the Windows system folder.
Italics	It is used for parameters and variables.	`bae log list --instanceid` *Instance_ID*
[] or [a|b]	It indicates that it is a optional value, and only one item can be selected.	`ipconfig` *[-all|-t]*

Style	Description	Example
{} or {a|b}	It indicates that it is a required value, and only one item can be selected.	`swich {stand | slave}`

Contents

Legal disclaimer..... I
Generic conventions..... I
1 Cluster API call method..... 1
1.1 Overview..... 1
1.2 Common parameters..... 1
1.3 Request structure..... 4
1.4 Return results..... 4
1.5 Signature..... 4
2 Cluster API list..... 11
2.1 Download the cluster certificate..... 11
2.2 Create a Kubernetes cluster..... 12
2.3 Create a managed Kubernetes cluster..... 28
2.4 Create a multi-zone Kubernetes cluster..... 36
2.5 Add existing ECS instances to a Kubernetes cluster..... 51
2.6 Obtain the cluster kubeconfig file..... 53
2.7 View a cluster..... 54
2.8 View all clusters..... 57
2.9 Create a multi-zone Kubernetes cluster..... 60
2.10 Scale out or in a cluster..... 67
2.11 Delete a cluster..... 71
3 Use Container Service through CLI..... 73
3.1 View all clusters..... 73
3.2 View cluster information..... 73
3.3 Create a cluster..... 74
3.4 Expand a cluster..... 78
3.5 Add existing ECS instances to a cluster..... 79
3.6 Delete a cluster..... 80

1 Cluster API call method

1.1 Overview

The call to Container Service API interfaces is performed by sending HTTP requests to the server address of the Container Service APIs and adding corresponding request parameters to the requests according to the interface instructions. The system returns the results according to the processing results of the requests.

1. *Common parameters*
2. *Request structure*
3. *Return results*
4. *Signature*

1.2 Common parameters

Public request headers

Public request parameters are the request parameters that each interface must use.

Parameter	Description	Options
`Authorizat ion`	The authentication information used to verify the validity of a request. Format: `AccessKeyI d : Signature`.	Required
`Content - Length`	The content length of an HTTP request, which is defined in RFC 2616.	Required
`Content - Type`	The content type of an HTTP request, which is defined in RFC 2616.	Required

Parameter	Description	Options
Content - MD5	The Base64-encoded results converted from 128 -bit MD5 hash value of the HTTP message body. We recommend that you add this message to all requests to prevent requests from being tampered.	Required
Date	The construction time of a request. Currently , only the GMT format is supported. If the difference between the construction time and the MNS server time exceeds 15 minutes, invalid request is returned.	Required
Host	The host access value, for example, diku . aliyuncs . com .	Required
Accept	The return type required by the client. applicatio n / json and applicatio n / xml are supported.	Required
x - acs - version	The API version. The current version is 2015 - 12 - 15 .	Required
x - acs - region - id	A region indicates the physical location of an Elastic Compute Service (ECS) instance.	Required
x - acs - signature - nonce	The unique random number used to prevent network replay attacks. Different random numbers must be used for different requests.	Required

Parameter	Description	Options
x - acs - signature - method	The method of user signature. Currently only HMAC - SHA1 is supported.	Required

Examples

```
GET  / clusters   HTTP / 1 . 1
Host :  cs . aliyuncs . com
Accept :  applicatio  n / json
User - Agent :  cs - sdk - python / 0 . 0 . 1  ( Darwin / 15 . 2 . 0
/ x86_64 ; 2 . 7 . 10 )
x - acs - signature - nonce :  f63659d4 - 10ac - 483b - 99da -
ea8fde61ea  e3
Authorizat  ion :  acs  < yourAccess  KeyId >:< yourSignat  ure >
x - acs - signature - version :  1 . 0
Date :  Wed ,  16   Dec   2015   11 : 18 : 47   GMT
x - acs - signature - method :  HMAC - SHA1
Content - Type :  applicatio  n / json ; charset = utf - 8
X - Acs - Region - Id :  cn - beijing
Content - Length :  0
```

Public response headers

Each time you send a request to call an interface, the system returns a unique identifier (RequestId), no matter the request is successful or not.

Examples

XML example:

```
<?  xml   version =" 1 . 0 "  encoding =" UTF - 8 "? >
<!— Result   Root   Node -->
< Interface   name + Response >
 | <!— Return   request   tag -->
 | < RequestId > 4C467B38 - 3910 - 447D - 87BC - AC049166F2  16 </
 RequestId >
 | <!— Return   result   data -->
</ Interface   name + Response >
```

JSON example:

```
{
    " RequestId ": " 4C467B38 - 3910 - 447D - 87BC - AC049166F2  16 "
    /*  Response   data  */
```

```
}
```

1.3 Request structure

Service address

The access address of Alibaba Cloud Container Service API is cs.aliyuncs.com.

Communication protocol

The system supports request communication by using the HTTP or HTTPS channel. We recommend that you use the HTTPS channel to send requests for more security.

Request methods

Use HTTP methods such as PUT, POST, GET, and DELETE to send different requests.

Request parameters

Each request must contain the public request parameters and the request parameters unique to specified operations.

Request encoding

Both requests and returned results are encoded by using the UTF-8 character set.

1.4 Return results

After the API service is called, data is returned in a unified format. The returned HTTP status code `2xx` indicates that the call is successful. The returned HTTP status code `4xx` or `5xx` indicates that the call fails. When the call is successful, data can be returned mainly in two formats: XML and JSON. When a request is sent, an external system can pass in a parameter to define the format of the returned data. The default format is XML.

Examples of returned results in this document are formatted for ease of viewing. The actual results returned are not formatted with line breaks or indentation.

1.5 Signature

Introduction

The Access Key ID and Access Key Secret are officially issued to you by Alibaba Cloud (you can apply for and manage them on the Alibaba Cloud official website). The

Access Key ID is used to identify your identity. The Access Key Secret is the key used to encrypt the signature string and verify the signature string on the server side. You must keep the Access Key Secret confidential. Only you and Alibaba Cloud can know it.

Container Service verifies each access request it receives. Therefore, all requests sent to Container Service must contain signature information. Container Service performs symmetric encryption by using the Access Key ID and Access Key Secret to verify the identity of request senders. If the calculated verification code is the same as the one provided, the request is considered as valid. Otherwise, Container Service rejects the request and returns the HTTP 403 error.

You can add the authorization header in the HTTP request to contain the signature information, indicating that the message has been authorized.

Container Service requires to contain the signature in the HTTP header in the format of `Authorizat ion : acs [ Access Key ID ]:[ Signature ]`.

The `Signature` calculation method is as follows:

```
Signature = base64 ( hmac - sha1 ( VERB + "\ n "
          + ACCEPT + "\ n "
          + Content - MD5 + "\ n "
          + Content - Type + "\ n "
          + Date + "\ n "
          + Canonicali zedHeaders + "\ n "
          + Canonicali zedResourc e ))
```

- `VERB` indicates the HTTP method, For example, `PUT` .
- `Accept` indicates the return type required by the client, which can be application/json or application/xml.
- `Content - MD5` indicates the MD5 value of the requested content.
- `Content - Type` indicates the type of the requested content.
- `Date` indicates the operation time, which cannot be null. Currently, only the GMT format is supported. If the difference between the request time and the CAS server time exceeds 15 minutes, CAS considers the request as invalid and returns error 400. For more information, see the 5th section. For example, `Thu , 17 Mar 2012 18 : 49 : 58 GMT` .
- `Canonicali zedHeaders` indicates a combination of fields started with `x - acs -` in the HTTP request.

- `Canonicali zedResourc e` indicates the uniform resource identifier (URI) of the resource in the HTTP request. For example, `/ clusters ? name = my - clusters & resource = new` .

Note:

Conform to the following specifications for `Canonicali zedHeaders` (headers started with `x - acs -`) before signature verification:

1. Convert the names of all HTTP request headers started with `x - acs -` to lowercase letters. For example, convert `X - ACS - Meta - Name : TaoBao` to `x - acs - meta - name : TaoBao` . The names of request headers are case-insensitive according to Alibaba Cloud specifications. However, we recommend that you use the lowercase letters.
2. If the value part of a public request header is too long, replace the `\ t` , `\ n` , `\ r` , and `\ f` separators with spaces.
3. Sort all HTTP request headers that are obtained from the preceding step and compliant with Alibaba Cloud specifications in the lexicographic ascending order.
4. Delete any space at either side of a separator between request header and content. For example, convert `x - acs - meta - name : TaoBao , Alipay` to `x - acs - meta - name : TaoBao , Alipay` .
5. Separate all headers and contents with the `\ n` separator to form the final CanonicalizedHeaders.

Note:

The format specification for `Canonicali zedResourc e : Canonicali zedResourc e` indicates the standard description of the resource you want to access. Sort sub-resources and query in the lexicographically ascending order

and separate them by using the `&` separator to generate a sub-resource string (all parameters after `?`) .

```
http :// cs . aliyuncs . com / clusters ? name = my - clusters &
resource = new
```

The `Canonicali zedResourc e` format is:

```
/ clusters ? name = my - clusters & resource = new
```

Signature example

Overview

The following example shows the signature process.

In the example, the Access Key ID and Access Key Secret are `access_key _id` and `access_key _secret` respectively. We recommend that you use your own API call program to calculate the signature string in the following example. Then, compare your signature string with the example result.

The request example is as follows:

```
POST http :// cs . aliyuncs . com / clusters ? param1 = value1 &
param2 = value2 HTTP / 1 . 1
Accept - Encoding : identity
Content - Length : 210
Content - MD5 : 6U4ALMkKSj 0PYbeQSHqg mA ==
x - acs - version : 2015 - 12 - 15
Accept : applicatio n / json
User - Agent : cs - sdk - python / 0 . 0 . 1 ( Darwin / 15 . 2 . 0
/ x86_64 ; 2 . 7 . 10 )
x - acs - signature - nonce : fbf6909a - 93a5 - 45d3 - 8b1c -
3e03a79167 99
x - acs - signature - version : 1 . 0
Date : Wed , 16 Dec 2015 12 : 20 : 18 GMT
x - acs - signature - method : HMAC - SHA1
Content - Type : applicatio n / json ; charset = utf - 8
X - Acs - Region - Id : cn - beijing
Authorizat ion : acs < yourAccess KeyId >:< yourSignat ure >
{" password ": " Just $****"," instance_t ype ": " ecs . m2 . medium
"," name ": " my - test - cluster - 9708 ****"," size ": 1 ,"
network_mo de ": " vpc "," data_disk_ category ": " cloud ","
data_disk_ size ": 10 ," ecs_image_ id ": " m - 253l **** l "}
```

Request construction process

Calculate `Content - Length` and `Content - MD5`

`Content - Length` : The length of the body content.

Note:

No space or line break is at the beginning of the example body.

```
 body : {" password ": " Just $****"," instance_t  ype ": " ecs . m2
 . medium "," name ": " my - test - cluster - 9708 ****"," size ":
 1 ," network_mo  de ": " vpc "," data_disk_  category ": " cloud ","
 data_disk_  size ":  10 ," ecs_image_  id ": " m - 253ll ****"}
 Content - Length :  210
```

`Content - MD5` : **The MD5 calculation process.**

```
 body : {" password ": " Just $****"," instance_t  ype ": " ecs . m2
 . medium "," name ": " my - test - cluster - 9708 ****"," size ":
 1 ," network_mo  de ": " vpc "," data_disk_  category ": " cloud ","
 data_disk_  size ":  10 ," ecs_image_  id ": " m - 253ll ****"}
#  Calculate  the  MD5  value  of  the  body .
 md5 ( body ):  e94e002cc9  0a4a3d0f61  b790487aa0  98
#  Convert  the  MD5  value  to  a  byte  array .  Convert
 every  two  hexadecima  l  symbols  of  the  MD5  value  to
 a  byte .
#  For  example ,  e9  ->  1111111111  1111111111  1111111010  01  ->
 - 23
 bytes ( md5 ( body )): {[- 23 ], [ 78 ], [ 0 ], [ 44 ], [- 55 ], [ 10
 ], [ 74 ], [ 61 ], [ 15 ], [ 97 ], [- 73 ], [- 112 ], [ 72 ], [ 122
 ], [- 96 ], [- 104 ]}
#  Convert  the  obtained  byte  array  to  a  Base64  string
 .
 base64 ( bytes ( md5 ( body ))):  6U4ALMkKSj  0PYbeQSHqg  mA ==
 Content - MD5 :  6U4ALMkKSj  0PYbeQSHqg  mA ==
```

Process `Canonicali zedHeaders`

```
#  List  all  headers  started  with  ' x - acs -'.
 x - acs - version :  2015 - 12 - 15
 x - acs - signature - nonce :  ca480402 - 7689 - 43ba - acc4 -
 4d2013d9d8  d4
 x - acs - signature - version :  1 . 0
 x - acs - signature - method :  HMAC - SHA1
 X - Acs - Region - Id :  cn - beijing
#  Convert  the  request  name  to  lowercase  letters ,  delete
  the  spaces  at  the  beginning  and  end  of  each  line
 ,  and  sort  the  headers  in  the  lexicograp  hically
 ascending  order .  Delete  any  space  at  either  side  of
 a  separator  between  request  header  and  content .
#  Note :  No  line  break  is  in  the  last  line .
 x - acs - region - id : cn - beijing
 x - acs - signature - method : HMAC - SHA1
 x - acs - signature - nonce : fbf6909a - 93a5 - 45d3 - 8b1c -
 3e03a79167  99
 x - acs - signature - version : 1 . 0
 x - acs - version : 2015 - 12 - 15
```

Calculate `Canonicali zedResourc e`

In the example, the length of `Canonicali zedResourc e` **is 27.**

 **Note:**

An `\ n` line break is at the end of the first line.

```
/ clusters ?  param1 = value1 & param2 = value2
```

Calculate `Signature`

Assemble `SignatureS  tring` . In the example, the length of the signature string is 307. An `\ n` line break is at the end of all lines except the last line.

```
 POST
 applicatio  n / json
 6U4ALMkKSj  0PYbeQSHqg  mA ==
 applicatio  n / json ; charset = utf - 8
 Wed ,  16   Dec   2015   12 : 20 : 18   GMT
 x - acs - region - id : cn - beijing
 x - acs - signature - method : HMAC - SHA1
 x - acs - signature - nonce : fbf6909a - 93a5 - 45d3 - 8b1c -
 3e03a79167  99
 x - acs - signature - version : 1 . 0
 x - acs - version : 2015 - 12 - 15
/ clusters ?  param1 = value1 & param2 = value2
```

Calculate `Signature`

```
#  Use   Access   Key   Secret   to   encrypt   the   signature
   string .  In   the   example ,  the   accessKeyS  ecret   is
 access_key  _secret .
 hmac - sha1 ( SignatureS  tring ):  fee03d405e  421ebaf514
 adec881038  c4b313584d
#  Convert   the   encrypted   string   to   a   byte   array ,
 similar   to   the   Content - MD5   calculatio  n   method .
#  Convert   the   byte   array   into   a   Base64   string   to
 get   the   final   signature   string .
 base64 ( bytes ( hmac - sha1 ( SignatureS  tring ))):  ZmVlMDNkND
 A1ZTQyMWVi  YWY1MTRhZG  VjODgxMDM4  YzRiMzEzNT  g0ZA ==
 Signature :  ZmVlMDNkND  A1ZTQyMWVi  YWY1MTRhZG  VjODgxMDM4
 YzRiMzEzNT  g0ZA ==
```

Finish

After the preceding processing, add some other header information to construct the final HTTP request as follows:

```
 POST   http :// cs . aliyuncs . com / clusters ? param1 = value1 &
 param2 = value2   HTTP / 1 . 1
 Accept - Encoding :  identity
 Content - Length :  210
 Content - MD5 :  6U4ALMkKSj  0PYbeQSHqg  mA ==
 x - acs - version :  2015 - 12 - 15
 Accept :  applicatio  n / json
 User - Agent :  cs - sdk - python / 0 . 0 . 1  ( Darwin / 15 . 2 . 0
 / x86_64 ; 2 . 7 . 10 )
 x - acs - signature - nonce :  fbf6909a - 93a5 - 45d3 - 8b1c -
 3e03a79167  99
 x - acs - signature - version :  1 . 0
 Date :  Wed ,  16   Dec   2015   12 : 20 : 18   GMT
 x - acs - signature - method :  HMAC - SHA1
```

```
 Content - Type :  applicatio  n / json ; charset = utf - 8
 X - Acs - Region - Id :  cn - beijing
 Authorizat  ion :  acs  < yourAccess  KeyId >:< yourSignat  ure >
{" password ": " Just $****"," instance_t  ype ": " ecs . m2 . medium
 "," name ": " my - test - cluster - 9708 ****"," size ":  1 ,"
 network_mo  de ": " vpc "," data_disk_  category ": " cloud ","
 data_disk_  size ":  10 ," ecs_image_  id ": " m - 253ll ****"}
```

2 Cluster API list

2.1 Download the cluster certificate

This topic describes how to download the certificate used by the currently logged on user to access the cluster.

Request information

Request line

```
GET  / clusters /: clusterid / certs
```

Special request header

None. See *Public request headers*.

Response information

Response line

```
HTTP / 1 . 1   200   OK
```

Special response header

None. See *Public response headers*.

Response body

```
{
    " config ": " string "
}
```

Response body description

Name	Type	Description
config	String	Kubeconfig file used by the current user to access the cluster

Examples

Request example

```
GET  / clusters / C5b5e80b0b  64a4bf6939  d2d8fbbc5d  ed7 / certs
HTTP / 1 . 1
```

```
< Public   request   header >
```

Response example

```
 HTTP / 1 . 1   200   Ok
< Public   response   header >
{
     " config ": " xxxxxxxx "
}
```

2.2 Create a Kubernetes cluster

This topic describes how to create a Kubernetes cluster and a specified number of nodes.

Request information

Request line

```
 POST  / clusters   HTTP / 1 . 1
```

Special request header

None. See *Public request headers*.

Request body

```
{
 " disable_ro  llback ": " whether   to   roll   back   the   cluster
   if   the   cluster   creation   fails "
 " name ": " cluster   name "
 " timeout_mi  ns ":  cluster   creation   timeout
 " cluster_ty  pe ": " cluster   type ,  namely ,  Kubernetes "
 " region_id ": " region "
 " vpcid ": " Virtual   Private   Cloud  ( VPC )  ID "
 " zoneid ": " zone "
 " vswitchid ": " VSwitch   ID "
 " container_  cidr ": " pod   Classless   Inter - Domain   Routing  (
 CIDR )  block "
 " service_ci  dr ": " service   CIDR   block "
 " ssh_flags ": " whether   to   enable   SSH   access   over   the
 Internet "
 " cloud_moni  tor_flags ":" whether   to   install   the   cloud
 monitoring   plugin "
 " login_pass  word ": " password   used   to   log   on   to   the
 node   by   using   SSH .  Use   either   this   parameter   or   the
   key_pair ."
 " key_pair ":" key   pair   name .  Use   either   this   parameter
 or   login_pass  word ."
 " master_ins  tance_char  ge_type ":" Master   instance   payment
 type   that   includes   PostPaid   and   PrePaid "
 " master_per  iod_unit ":" Subscripti  on   unit   that   which
 includes   month   and   year ,  and   takes   effect   only   for
 the   PrePaid   payment   type "
 " master_per  iod ":" Subscripti  on   period   that   takes   effect
   only   for   the   PrePaid   payment   type "
```

```
  " master_aut  o_renew ":" whether   to   enable   master   node
 automatic   renew "
 " master_aut  o_renew_pe  riod ":" Master   node   renew   period "
 " master_ins  tance_type ": " Master   instance   type "
 " master_sys  tem_disk_c  ategory ": " Master   node   system   disk
   type "
 " master_sys  tem_disk_s  ize ":" Master   system   disk   size "
 " master_dat  a_disk ":" whether   to   mount   data   disk   to
 the   Master   node "
 " master_sys  tem_disk_c  ategory ": " Master   node   data   disk
 type "
 " master_sys  tem_disk_s  ize ":" Master   node   data   disk   size
 "
 " worker_ins  tance_char  ge_type ":" Worker   node   payment   type
   that   includes   PrePaid   and   PostPaid "
 " worker_per  iod_unit ":" Subscripti  on   unit   that   includes
   Month   and   Year ,  and   takes   effect   only   for   the
 PrePaid   payment   type "
 " worker_per  iod ":" Subscripti  on   period   that   takes   effect
   only   for   the   PrePaid   payment   type "
 " worker_aut  o_renew ":" whether   to   enable   worker   node
 automatic   renew .  Available   values   are   true   and   false ."
 " worker_aut  o_renew_pe  riod ":" Worker   node   renew   period "
 " worker_ins  tance_type ": " Worker   instance   type "
 " worker_sys  tem_disk_c  ategory ": " Worker   node   system   disk
   type "
 " worker_sys  tem_disk_s  ize ": " Worker   node   system   disk
 size "
 " worker_dat  a_disk ":" whether   to   mount   data   disks   to
 the   Worker   node "
 " worker_dat  a_disk_cat  egory ":" Worker   node   data   disk
 type "
 " worker_dat  a_disk_siz  e ":" Worker   node   data   disk   size "
 " num_of_nod  es ": " number   of   Worker   nodes "
 " snat_entry ": " whether   to   set   an   SNAT   entry "
 " public_slb ":" whether   to   create   the   SLB   correspond  ing
   to   the   Internet   API   server "
}
```

Request body description

Name	Type	Required	Description
disable_rollback	bool	No	whether to roll back the cluster if the cluster creation fails. · true: indicates not to roll back the cluster. · false: indicates to roll back the cluster. The default value is true. If you select to roll back, resources generated in the creation process will be released. We recommend that you do not select false.
name	string	Yes	cluster name. A cluster name can contain uppercase letters, lowercase letters, Chinese characters, numbers, and hyphens (-).
timeout_mins	int	No	timeout (in minutes) for creating the cluster resource stack. The default value is 60.
region_id	string	Yes	ID of the region in which the cluster resides
zoneid	string	Yes	zone of the region to which the cluster belongs.

Name	Type	Required	Description
vpcid	string	No	VPC ID, which can be empty. If you do not set any VPC, the system automatically creates a VPC that belongs to the CIDR block 192.168.0.0/16.  Note: The vpcid parameter and the vswitchid parameter must be both set to empty or relevant values.
vswitchid	string	No	VSwitch ID, which can be empty. If you do not set this parameter , the system automatically creates a VSwitch that belongs to the CIDR block 192.168 .0.0/16.
container_ cidr	string	No	pod CIDR block , which cannot overlap with the VPC CIDR block If you choose to enable the system to automatically create a VPC, the 172.16.0.0/16 pod CIDR block is used by default.

Name	Type	Required	Description
service_ci dr	string	No	service CIDR block that cannot overlap with the VPC CIDR block or the pod CIDR block If you choose to enable the system to automatica lly create a VPC, the 172.19.0.0/20 service CIDR block is used by default.
master_ins tance_char ge_type	string	Yes	Master node payment type. Available values are: · PrePaid, namely , Subscription · Postpaid, namely , Pay-As-You-Go , which is the default value.
master_per iod_unit	string	No	If you select the PrePaid payment type, you need to specify a Subscription period that uses either of the following units: · Week: one week is used as the timing unit. · Month: one month is used as the timing unit.

Name	Type	Required	Description
master_period	int	No	Subscription period. This parameter setting takes effect and becomes required only if the value of worker_instance_charge_type is set to PrePaid . The parameter values for different Subscription period units are as follows: · { “1” , “2” , “3” , “4” } for PeriodUnit = Week · { “1” , “2” , “3” , “4” , “5” , “6” , “7” , “8” , “9” , “12” , “24” , “36” ,” 48” ,” 60” } for PeriodUnit = Month

Name	Type	Required	Description
master_auto_renew	bool	No	whether to enable Master node automatic renew. This parameter setting takes effect only if the value of master_instance_charge_type is set to PrePaid . Available values are: · true: indicates to enable automatic renew · false: indicates not to enable automatic renew
master_auto_renew_period	int	No	automatic renew period. This parameter setting takes effect and becomes required only if you select the PrePaid payment type and enable automatic renew. Available values for different Subscription period units are as follows: · { “1” , “2” , “3” } for PeriodUnit = Week · { “1” , “2” , “3” , “6” , “12” } for PeriodUnit = Month

Name	Type	Required	Description
master_instance_type	string	Yes	Elastic Compute Service (ECS) instance type code of the Master node For more information, see*Instance type families*
master_system_disk_category	string	Yes	Master node system disk type. Available values are: · cloud_efficiency : indicates an Ultra cloud disk · cloud_ssd: indicates an SSD cloud disk
master_system_disk_size	int	Yes	Master node system disk size in GiB
master_data_disk	bool	No	whether to mount data disks to the Master node. Available values are: · true: indicates to mount data disks · false: indicates not to mount data disks. This is the default value.

Name	Type	Required	Description
master_data_disk_category	string	No	Master node data disk type. This parameter setting takes effect only if data disks are mounted to the Master node. Available values are: · cloud: indicates a basic cloud disk · cloud_efficiency: indicates an Ultra cloud disk · cloud_ssd: indicates an SSD cloud disk
master_data_disk_size	int	No	Master node data disk size in GiB. This parameter setting takes effect only if data disks are mounted to the Master node.
worker_instance_charge_type	string	No	Worker node payment type. The default value is PostPaid. Available values are: · PrePaid: indicates Subscription · PostPaid: indicates Pay-As-You-Go

Name	Type	Required	Description
worker_period_unit	string	No	If you select the PrePaid payment type, you need to specify a Subscription period that uses either of the following units: · Week: one week is used as the timing unit. · Month: one month is used as the timing unit.
worker_period	int	No	Subscription period. This parameter setting takes effect and becomes required only if the value of worker_instance_charge_type is set to PrePaid. The parameter values for different Subscription period units are as follows: · {“1”, “2”, “3”, “4”} for PeriodUnit = Week · {“1”, “2”, “3”, “4”, “5”, “6”, “7”, “8”, “9”, “12”, “24”, “36”, “48”, “60”} for PeriodUnit = Month

Name	Type	Required	Description
worker_auto_renew	bool	No	whether to enable Worker node automatic renew. Available values are: · true: indicates to enable automatic renew · false: indicates not to enable automatic renew
worker_auto_renew_period	int	No	automatic renew period. This parameter setting takes effect and becomes required only if you select the PrePaid payment type and enable automatic renew. Available values for different Subscription period units are as follows: · { “1” , “2” , “3” } for `PeriodUnit = Week` · { “1” , “2” , “3” , “6” , “12” } for `PeriodUnit = Month`
worker_instance_type	string	Yes	ECS instance type code of the Worker node For more information, see*Instance type families*

Name	Type	Required	Description
worker_system_disk_category	string	Yes	Worker node system disk type
worker_system_disk_size	int	Yes	Worker node system disk size in GiB
worker_data_disk	string	No	whether to amount data disks. Available values are: · true: indicates to mount data disks to Worker nodes · false: indicates not to mount data disks to Worker nodes
worker_data_disk_category	int	No	data disk type. This parameter setting takes effect only if you mount data disks to the Worker nodes. Available values are: · cloud: indicate a basic cloud disk · cloud_efficiency: indicates an Ultra cloud disk · cloud_ssd: indicates an SSD cloud disk
worker_data_disk_size	string	No	data disk size in GiB. This parameter setting takes effect only if data disks are mounted to the Worker node.

Name	Type	Required	Description
login_password	string	Yes	SSH logon password. The password must be a string of 8 to 30 characters and contain uppercase letters, lowercase letters, numbers, and symbols. Choose either SSH logon password or key_pair.
key_pair	string	Yes	key pair name Use either this parameter or login_password.
num_of_nodes	int	Yes	number of Worker nodes. The value is in the range of 0 to 300.

Name	Type	Required	Description
snat_entry	bool	Yes	whether to set an SNAT entry for the container network. If you set the system to automatically create a VPC, you must set this parameter to true. If you use an existing VPC, you need to set this parameter according to whether the VPC has the capability to access the Internet. · If the existing VPC has the capability to access the Internet, you need to set this parameter to false. · If the existing VPC does not have the capability to access the Internet, setting this parameter to true indicates to set an SNAT entry; setting this parameter to false indicates not to set any SNAT entry and the Internet cannot be accessed.

Name	Type	Required	Description
ssh_flags	bool	No	whether to enable SSH access over the Internet. · true: yes · false: no
cloud_monitor_flags	bool	No	whether to install the cloud monitoring plugin. · true: indicates to install the plugin · false: indicates not to install the plugin
public_slb	bool	No	whether to enable the Internet API server. · true: indicates to enable the Internet API server. This is the default value. · false: indicates not to create the Internet API server but only to create the private network API server.

Response information

Response line

```
HTTP / 1 . 1   202   Accepted
```

Special response header

None. See *Public response headers*.

Response body

```
{
```

```
    " cluster_id ":" string ",
    " request_id ":" string ",
    " task_id ":" string "
}
```

Examples

Request example

```
 POST  / clusters   HTTP / 1 . 1
< Public   request   header >
{
 " disable_ro  llback ":  true ,
 " name ": " my - test - Kubernetes - cluster ",
 " timeout_mi  ns ":  60 ,
 " cluster_ty  pe ": " Kubernetes ",
 " region_id ": " cn - beijing ",
 " zoneid ": " cn - beijing - f ",

 " vpcid ": "",
 " vswitchid ": "",
 " num_of_nod  es ":  1 ,
 " container_  cidr ": " 172 . 16 . 0 . 0 / 16 ",
 " service_ci  dr ": " 172 . 19 . 0 . 0 / 20 ",
 " cloud_moni  tor_flags ":  true ,
 " master_ins  tance_type ": " ecs . sn1ne . large ",
 " master_sys  tem_disk_c  ategory ": " cloud_effi  ciency ",
 " master_sys  tem_disk_s  ize ":  40 ,

 " worker_ins  tance_type ": " ecs . sn1ne . large ",
 " worker_sys  tem_disk_c  ategory ": " cloud_effi  ciency ",
 " worker_sys  tem_disk_s  ize ":  40 ,

 " snat_entry ":  true ,
 " ssh_flags ":  true ,
 " login_pass  word ": " Hello1234 "

}
```

Response example

```
 HTTP / 1 . 1   202   Accepted
< Public   response   header >
{
    " cluster_id ": " cb95aa626a  47740afbf6  aa099b650d  7ce ",
    " request_id ": " 687C5BAA - D103 - 4993 - 884B - C35E4314A1  E1
 ",
    " task_id ": " T - 5a54309c80  282e39ea00  002f "
```

```
}
```

2.3 Create a managed Kubernetes cluster

Create a Kubernetes cluster with a specified number of nodes.

Request information

Request line

```
POST / clusters HTTP / 1 . 1
```

Special request header

None. See *Public request headers*.

Request body

```
{
" disable_ro llback ": " whether or not to roll back if
the cluster fails to be created ",
" name ": " cluster name ",
" timeout_mi ns ": " timeout for creating the cluster ",
" cluster_ty pe ": " cluster type , Managed Kubernetes ",
" region_id ": " region ",
" vpcid ": " Virtual Private Cloud ( VPC ) ID ",
" zoneid ": " zone ",
" vswitchid ": " VSwitch ID ",
" container_ cidr ": " pod Classless Inter - Domain Routing (
CIDR )",
" service_ci dr ": " service CIDR ",
" cloud_moni tor_flags ":" whether or not to install the
cloud monitoring plug - in ",
" login_pass word ": " password used to log on to the
node by using SSH . Use either this parameter or the
key_pair .",
" key_pair ":" key pair name . use either this parameter
or login_pass word .",
" worker_ins tance_char ge_type ":" worker node payment type
PrePaid | PostPaid ",
" worker_per iod_unit ":" subscripti on unit , which includes
month and year , and takes effect only for the
prepaid type .
" worker_per iod ":" subscripti on period , which takes
effect only for the prepaid type ",
" worker_aut o_renew ":" worker node auto renew true | false
",
" worker_aut o_renew_pe riod ":" worker node renew period ",
" worker_ins tance_type ": " instance type of worker nodes
",
" worker_sys tem_disk_c ategory ": " system disk type of
worker nodes ",
" worker_sys tem_disk_s ize ": " system disk size of worker
nodes ",
" worker_dat a_disk ":" whether or not to mount data
disks true | false ",
" data_disk_ category ": " data disk category ",
" worker_dat a_disk_siz e ":" data disk size ",
```

```
 " num_of_nod  es ": " number   of   worker   nodes ",
 " snat_entry ": " whether   or   not   to   configure   the
 SNATEntry ",
}
```

Request body explanation

Name	Type	Required	Description
disable_rollback	bool	No	Whether or not to roll back if the cluster fails to be created: · true : Not roll back if the cluster fails to be created. · false : Roll back if the cluster fails to be created. Resources generated in the creation process are released if you select to roll back. We do not recommend that you use false .
name	string	Yse	The cluster name, which can contain uppercase English letters, lowercase English letters, Chinese characters , numbers, and hyphens (-).
timeout_mi ns	int	No	The timeout (in minutes) for creating the cluster resource stack. The default value is 60.

Name	Type	Required	Description
region_id	string	Yse	The ID of the region in which the cluster resides.
zoneid	string	Yse	The zone of the region in which the cluster resides.
vpcid	string	No	VPC ID, which can be empty. If left empty, the system automatically creates a VPC. The CIDR block of the automatically created VPC is 192.168.0.0/16. The VPC ID and VSwitch ID must be empty or have a certain value at the same time.
vswitchid	string	No	VSwitch ID, which can be empty. If left empty, the system automatically creates a VSwitch. The CIDR block of the automatically created VSwitch is 192.168.0.0/16.
container_ cidr	string	No	The pod CIDR block, which cannot conflict with the VPC CIDR block. If you choose to allow the system to automatically create a VPC, the CIDR block 172.16.0.0/16 is used by default.

Name	Type	Required	Description
service_cidr	string	No	The service CIDR block, which cannot conflict with the VPC CIDR block or the pod CIDR block. If you choose to allow the system to automatically create a VPC, the 172.19.0.0/20 CIDR block is used by default.
worker_instance_charge_type	string	No	Worker node payment type, which has the following options: · PrePaid: Subscription · PostPaid: Pay-As-You-Go.
worker_period_unit	string	No	Specify a period when you select the prepaid type. You can choose from: · Week: Weeks are used as the timing units. · Month: Months are used as the timing units.

Name	Type	Required	Description
worker_period	int	No	Subscription period. It takes effect and becomes required only when the value of worker_instance_charge_type is set to PrePaid . · For PeriodUnit = Week , period values includes: { “1” , “2” , “3” , “4” }, · For PeriodUnit = Month , period values include: { “1” , “2” , “3” , “4” , “5” , “6” , “7” , “8” , “9” , “12” , “24” , “36” ,” 48” ,” 60” }
worker_auto_renew	bool	No	Whether or not to enable worker node auto-renew. Optional values are: · true: Enable auto renew. · false: Disable automatic renew .

Name	Type	Required	Description
worker_auto_renew_period	int	No	Auto renew period. It takes effect and becomes required only when the value of worker_instance_charge_type is set to PrePaid . · For PeriodUnit = Week : { “1” , “2” , “3” }, · For PeriodUnit = Month : { “1” , “2” , “3” , “6” , “12” }
worker_data_disk	string	No	Whether or not to amount data disks. Available options: · true: Mount data disks onto worker nodes · false: Not mount data disks onto worker nodes
worker_data_disk_category	int	No	Data disk type
worker_data_disk_size	string	No	Data disk size
worker_instance_type	string	Yse	The ECS instance type code of the worker nodes. For more information, see*Instance type families*

Name	Type	Required	Description
worker_system_disk_category	string	Yes	The system disk type of the worker nodes.
worker_system_disk_size	int	Yes	The system disk size of the worker nodes.
login_password	string	Yes	The SSH logon password, which is 8–30 characters long and must contain uppercase letters/lowercase letters, numbers, and special characters at the same time. Choose either SSH logon password or key_pair.
key_pair	string	Yes	The keypair name. Use either this parameter or login_password.
num_of_nodes	int	Yes	The number of worker nodes. The value range is [0, 300].

Name	Type	Required	Description
snat_entry	bool	Yes	Whether or not to configure the SNAT for VPC. This parameter must be set to true if a VPC is created automatically. Configure the parameter value according to the outbound capability if you select to use an existing VPC to create the cluster.
cloud_monitor_flags	bool	No	Whether or not to install the cloud monitoring plug-in.

Response information

Response line

```
HTTP / 1 . 1  202  Accepted
```

Special response header

None. See *Public response headers*.

Response body

```
{
" cluster_id ":" string ",
" request_id ":" string ",
" task_id ":" string "
}
```

Examples

Request example

```
POST  / clusters  HTTP / 1 . 1
< Public  request  header >
{
" disable_ro  llback ":  true ,
" name ": " my - test - Kubernetes - cluster ",
" timeout_mi  ns ":  60 ,
" cluster_ty  pe ": " ManagedKub  ernetes ",
```

```
" region_id ": " cn - beijing ",
" zoneid ": " cn - beijing - f ",
" vpcid ": "",
" vswitchid ": "",
" num_of_nod  es ":  1 ,
" container_  cidr ": " 172 . 16 . 0 . 0 / 16 ",
" service_ci  dr ": " 172 . 19 . 0 . 0 / 20 ",
" cloud_moni  tor_flags ":  true ,
" master_ins  tance_type ": " ecs . sn1ne . large ",
" master_sys  tem_disk_c  ategory ": " cloud_effi  ciency ",
" master_sys  tem_disk_s  ize ":  40 ,

" worker_ins  tance_type ": " ecs . sn1ne . large ",
" worker_sys  tem_disk_c  ategory ": " cloud_effi  ciency ",
" worker_sys  tem_disk_s  ize ":  40 ,

" snat_entry ":  true ,
" login_pass  word ": " Hello1234 "

}
```

Response examples

```
 HTTP / 1 . 1   202   Accepted
< Public   response   header >
{
    " cluster_id ": " cb95aa626a  47740afbf6  aa099b650d  7ce ",
    " request_id ": " 687C5BAA - D103 - 4993 - 884B - C35E4314A1  E1
 ",
    " task_id ": " T - 5a54309c80  282e39ea00  002f "
}
```

2.4 Create a multi-zone Kubernetes cluster

This topic describes how to create a highly available Kubernetes cluster across multiple zones, and create a specified number of nodes.

Request information

Request line

```
 POST  / clusters   HTTP / 1 . 1
```

Special request header

None. See *Public request headers*.

Request body

```
{
" disable_ro  llback ": " indicates   whether   to   roll   back   if
   the   cluster   creation   fails ",
" name ": " cluster   name ",
" timeout_mi  ns ": " cluster   creation   timeout ",
" cluster_ty  pe ": " Kubernetes ",
" region_id ": " region ",
" multi_az ":  true ,
```

```
" vpcid ": " VPC   ID  ",
" container_  cidr ": " container   Classless   Inter - Domain
 Routing  ( CIDR )",
" service_ci  dr ": " service   CIDR ",
" vswitch_id  _a ": " ID   of   the   switch   in   the   first   zone
 ",
" vswitch_id  _b ": " ID   of   the   switch   in   the   second
 zone ",
" vswitch_id  _c ": " ID   of   the   switch   in   the   third   zone
 ",
" master_ins  tance_type  _a ": " instance   specificat  ion   of
 the   Master   node   in   the   first   zone ",
" master_ins  tance_type  _b ": " instance   specificat  ion   of
 the   Master   node   in   the   second   zone ",
" master_ins  tance_type  _c ": " instance   specificat  ion   of
 the   Master   node   in   the   third   zone ",
" master_ins  tance_char  ge_type ":" Master   instance   payment
 type   that   includes   postpaid   and   prepaid ",
" master_per  iod_unit ":" subscripti  on   unit   that   includes
   month   and   year ,  and   takes   effect   only   for   the
 prepaid   payment   type ",
" master_per  iod ":" subscripti  on   period   that   takes   effect
   only   for   the   prepaid   payment   type ",
" master_aut  o_renew ":" whether   Master   nodes   auto   renew ",
" master_aut  o_renew_pe  riod ":" Master   node   renew   period ",
" master_sys  tem_disk_c  ategory ": " Master   node   system   disk
 type ",
" master_sys  tem_disk_s  ize ": " Master   node   system   disk
 size ",
" master_dat  a_disk ":" Whether   data   disks   are   mounted   to
 the   Master   node ",
" master_dat  a_disk_cat  egory ":" Master   node   data   disk   type
 ",
" master_dat  a_disk_siz  e ":" Master   node   data   disk   size ",
" worker_ins  tance_type  _a ": " instance   specificat  ion   of
 the   Worker   node   in   the   first   zone ",
" worker_ins  tance_type  _b ": " instance   specificat  ion   of
 the   Worker   node   in   the   second   zone ",
" worker_ins  tance_type  _c ": " instance   specificat  ion   of
 the   Worker   node   in   the   third   zone ",
" worker_ins  tance_char  ge_type ":" Worker   node   payment   type
 that   includes   postpaid   and   prepaid ",
" worker_per  iod_unit ":" subscripti  on   unit   that   includes
   month   and   year ,  and   takes   effect   only   for   the
 prepaid   payment   type ",
" worker_per  iod ":" subscripti  on   period   that   takes   effect
   only   for   the   prepaid   payment   type ",
" worker_aut  o_renew ":" whether   Worker   nodes   auto   renew .
 This   parameter   can   be   set   to   true   or   false ."
" worker_aut  o_renew_pe  riod ":" Worker   node   renew   period ",
" worker_sys  tem_disk_c  ategory ": " Worker   node   system   disk
 type ",
" worker_sys  tem_disk_s  ize ": " Worker   node   system   disk
 size ",
" worker_dat  a_disk ":" whether   the   worker   node   has   data
 disks   mounted ",
" worker_sys  tem_disk_c  ategory ": " Whether   data   disks   are
 mounted   to   the   Worker   node ",
" worker_sys  tem_disk_s  ize ": " Worker   node   data   disk   size
 ",
" num_of_nod  es_a ": " number   of   the   Worker   nodes   in   the
   first   zone ",
" num_of_nod  es_b ": " number   of   the   Worker   nodes   in   the
   second   zone ",
```

```
" num_of_nod  es_c ": " number   of   the   Worker   nodes   in   the
   third   zone ",
" ssh_flags ": " whether   enable   SSH   access   over   the
 Internet ",
" login_pass  word ": " SSH   logon   password ",
" cloud_moni  tor_flags ":" whether   to   install   the   cloud
 monitoring   plugin ",
" public_slb ":" whether   to   create   the   SLB   correspond  ing
 to   the   Internet   API   server "
}
```

Request body description

Name	Type	Required	Description
disable_rollback	bool	No	Whether to roll back if the cluster creation fails: · true that indicates not to roll back if the cluster creation fails. · false that indicates to roll back if the cluster creation fails. The default is true. If you select to roll back upon the cluster creation failure, resources generated in the creation process will be released. We recommend that you do not select false.
name	string	Yes	cluster name. A cluster name can contain uppercase and lowercase letters, Chinese characters, numbers, and hyphens (-).

Name	Type	Required	Description
timeout_mi ns	int	Yes	timeout (in minutes) for creating the cluster resource stack. The default is 60.
cluster_ty pe	string	Yes	cluster type that is fixed to Kubernetes
region_id	string	Yes	ID of the region in which the cluster resides
multi_az	bool	Yes	highly available cluster that is fixed to true
vpcid	string	Yes	VPC ID
container_ cidr	string	No	container CIDR block that cannot overlap with the VPC CIDR block If you choose to enable the system to automatically create a VPC, the 172.16.0.0/16 CIDR block is used by default.
service_ci dr	string	No	service CIDR block that cannot overlap with the VPC CIDR block or the container CIDR block. If you choose to enable the system to automatically create a VPC, the 172.19.0.0/20 CIDR block is used by default.
vswitch_id _a	string	Yes	ID of the first switch

Name	Type	Required	Description
vswitch_id _b	string	Yes	ID of the second switch
vswitch_id _c	string	Yes	ID of the third switch
master_instance_charge_type	string	Yes	Master node payment type. Available values are: · PrePaid, namely , Subscription · PostPaid, namely , Pay-As-You-Go . The default is Postpaid.
master_period_unit	string	No	period unit of Subscription. You need to set this parameter if you specify the PrePaid payment type. Available values include: · week, namely, one week is used as the timing unit. · month, namely , one month is used as the timing unit.

Name	Type	Required	Description
master_period	int	No	Subscription period. This parameter setting takes effect and becomes required only if the value of master_instance_charge_type is set to PrePaid . Available values of this parameter for different period unit settings are as follows: · { “1” , “2” , “3” , “4” } for the PeriodUnit = Week setting. · { “1” , “2” , “3” , “4” , “5” , “6” , “7” , “8” , “9” , “12” , “24” , “36” ,” 48” ,” 60” } for the PeriodUnit = Month setting.
master_auto_renew	bool	No	whether enable Master node automatic renew. Available values are: · true, namely, enable automatic renew · false, namely , disable automatic renew

Name	Type	Required	Description
master_auto_renew_period	int	No	automatic renew period. This parameter setting takes effect and becomes required only if the value of master_instance_charge_type is set to PrePaid . Available values of this parameter for different period unit settings are as follows: · { “1” , “2” , “3” } for the PeriodUnit = Week setting. · { “1” , “2” , “3” , “6” , “12” } for PeriodUnit = Month .
master_instance_type_a	string	Yes	specification type code of ECS used by the Master node in the first zone For more information, see *Instance type families*.
master_instance_type_b	string	Yes	specification type code of ECS used by the Master node in the second zone For more information, see *Instance type families*.

Name	Type	Required	Description
master_instance_type_c	string	Yes	specification type code of ECS used by the Master node in the third zone For more information, see *Instance type families*.
master_system_disk_category	string	Yes	Master node system disk type. Available values include: · cloud_efficiency, namely, the Ultra cloud disk · cloud_ssd, namely, the SSD cloud disk
master_system_disk_size	int	Yes	Master node system disk size, in GiB
master_data_disk	bool	No	whether to mount data disks to the Master node. Available values are: · true, namely, mount data disks · false, namely, not mount data disks

Name	Type	Required	Description
master_data_disk_category	string	No	Master node data disk type. This parameter setting takes effect only if data disks are mounted to the Master node. Available values are: · cloud, namely, basic cloud disks · cloud_efficiency, namely, Ultra cloud disks · cloud_ssd, namely, SSD cloud disks
master_data_disk_size	int	No	Master node data disk size in GiB. This parameter setting takes effect only if data disks are mounted to the Master node.
worker_instance_charge_type	string	No	Worker node payment type. The default is Pay-As-You-Go. Available values are: · PrePaid, namely, Subscription · PostPaid, namely, Pay-As-You-Go

Name	Type	Required	Description
worker_period_unit	string	No	period unit of Subscription. You need to set this parameter if you specify the PrePaid payment type. Available values include: · Week, namely, one week is used as the timing unit · Month, namely , one month is used as the timing unit
worker_period	int	No	Subscription period. It takes effect and becomes required only when the value of worker_instance_charge_type is set to PrePaid . · { “1” , “2” , “3” , “4” } for the PeriodUnit = Week setting. · { “1” , “2” , “3” , “4” , “5” , “6” , “7” , “8” , “9” , “12” , “24” , “36” ,” 48” ,” 60” } for the PeriodUnit = Month setting.

Name	Type	Required	Description
worker_auto_renew	bool	No	whether to enable Worker node automatic renew. Available values include: · true, namely, enable automatic renew · false, namely , disable automatic renew
worker_auto_renew_period	int	No	automatic renew period. This parameter setting takes effect and becomes required only if you select Subscription and enable automatic renew. Available values of this parameter for different period unit settings are as follows: · { “1” , “2” , “3” } for the `PeriodUnit = Week` setting · { “1” , “2” , “3” , “6” , “12” } for the `PeriodUnit = Month` setting

Name	Type	Required	Description
worker_instance_type_a	string	Yes	specification type code of ECS used by the Worker node in the first zone For more information, see*Instance type families*
worker_instance_type_b	string	Yes	specification type code of ECS used by the Worker node in the second zone For more information, see*Instance type families*
worker_instance_type_c	string	Yes	specification type code of ECS used by the Worker node in the third zone For more information, see*Instance type families*
worker_system_disk_category	string	Yes	Worker node system disk type. Available values include: · cloud_efficiency, namely, the Ultra cloud disk · cloud_ssd, namely, the SSD cloud disk
worker_system_disk_size	int	Yes	Worker node system disk size, in GiB

Name	Type	Required	Description
worker_data_disk	string	No	whether to mount data disks to the Worker node. Available values are: · true, namely, mount data disks to the Worker node · false, namely, not mount data disks to the Worker node
worker_data_disk_category	int	No	Worker node data disk type. This parameter setting takes effect only if data disks are mounted to the Worker node. Available values are: · cloud, namely, basic cloud disks · cloud_efficiency, namely, Ultra cloud disks · cloud_ssd, namely, SSD cloud disks
worker_data_disk_size	string	No	Worker node data disk size in GiB. This parameter setting takes effect only if data disks are mounted to the Worker node.

Name	Type	Required	Description
num_of_nodes_a	int	Yes	number of Worker nodes in the first zone The value is in the range of 1 to 300.
num_of_nodes_b	int	Yes	number of Worker nodes in the second zone The value is in the range of 1 to 300.
num_of_nodes_c	int	Yes	number of Worker nodes in the third zone The value is in the range of 1 to 300.
login_password	string	Yes	SSH logon password. A password must be a string of 8 to 30 characters and contain uppercase letters, lowercase letters, numbers, and special symbols. You can choose to set either an SSH logon password or a key_pair.
key_pair	string	Yes	keypair name. Use either this parameter or login_password.
ssh_flags	bool	No	whether to enable SSH access over the Internet
cloud_monitor_flags	bool	No	whether to install the cloud monitoring plugin.

Name	Type	Required	Description
public_slb	bool	No	whether to enable the API server over the Internet. The default setting is true. If you set this parameter to false, the API server over the Internet will not be created, and only the API server over your private network will be created.

Response information

Response line

```
HTTP / 1 . 1  202  Accepted
```

Special response header

None. See *Public response headers*.

Response body

```
{
" cluster_id ":" string ",
" request_id ":" string ",
" task_id ":" string "
}
```

Examples

Request example

```
POST  / clusters  HTTP / 1 . 1
< Public  request  header >
{
" disable_ro  llback ":  true ,
" name ": " mulit - az - cluster ",
" timeout_mi  ns ":  60 ,
" cluster_ty  pe ": " Kubernetes ",
" region_id ": " cn - shanghai ",
" multi_az ":  true ,
" container_  cidr ": " 10 . 4 . 0 . 0 / 16 ",
" service_ci  dr ": " 10 . 3 . 0 . 0 / 20 ",
" vpcid ": " vpc - mytestvpc ",
" vswitch_id  _a ": " vsw - a ",
" vswitch_id  _b ": " vsw - b ",
" vswitch_id  _c ": " vsw - c ",
```

```
" master_ins  tance_type  _a ": " ecs . c5 . large ",
" master_ins  tance_type  _b ": " ecs . d1 . 2xlarge ",
" master_ins  tance_type  _c ": " ecs . c4 . xlarge ",
" master_sys  tem_disk_c  ategory ": " cloud_effi  ciency ",
" master_sys  tem_disk_s  ize ":  40 ,
" worker_ins  tance_type  _a ": " ecs . c5 . large ",
" worker_ins  tance_type  _b ": " ecs . d1 . 2xlarge ",
" worker_ins  tance_type  _c ": " ecs . c4 . xlarge ",
" worker_sys  tem_disk_c  ategory ": " cloud_effi  ciency ",
" worker_sys  tem_disk_s  ize ":  40 ,
" num_of_nod  es_a ":  2 ,
" num_of_nod  es_b ":  2 ,
" num_of_nod  es_c ":  2 ,
" ssh_flags ":  true ,
" login_pass  word ": " Hello1234 ",
" cloud_moni  tor_flags ":  true

}
```

Response example

```
 HTTP / 1 . 1   202   Accepted
< Public   response   header >
{
" cluster_id ": " cb95aa626a  47740afbf6  aa099b650d  7ce ",
" request_id ": " 687C5BAA - D103 - 4993 - 884B - C35E4314A1  E1 ",
" task_id ": " T - 5a54309c80  282e39ea00  002f "
}
```

2.5 Add existing ECS instances to a Kubernetes cluster

This topic describes how to add existing Elastic Compute Service (ECS) instances to a cluster.

> **Note:**
> The system disk is replaced in the process of adding ECS instances. Therefore, you need to back up the data in advance.

Request information

Request line

```
 POST  / clusters /{ cluster_id }/ attach   HTTP / 1 . 1
```

Request line parameter (URI Param)

Name	Type	Required	Description
cluster_id	String	Yes	Custer ID

Special request header

None. See *Public request headers*.

Request body

```
{
    " password ": " password   of   the   root   account   that   is
 used   to   log   on   to   the   ECS   instance ",
    " instances ": " ECS   instance   array   to   be   added ",
}
```

Request body parsing

Name	Type	Required	Description
password	String	Yes	Password of the ECS instance. The password must be a string of 8 to 30 characters and contain uppercase letters, lowercase letters, numbers, and symbols.
instances	Array	Yes	Array of existing ECS instances.

Response information

Response line

```
HTTP / 1 . 1   202   OK
```

Special response header

None. See *Public response headers*.

Response body

```
{
    " list ": [
        {
            " code ": " 200 ",
            " instanceId ": " i - 2zee3oiwcy  oz7kwdo8bt ",
            " message ": " successful "
        },
        {
            " code ": " 200 ",
            " instanceId ": " i - 2ze0lgm3y6  iylcbtcypf ",
            " message ": " successful "
        }
    ],
    " task_id ": " T - 5a544aff80  282e39ea00  0039 "
```

```
}
```

Example

Request example

```
 POST  / clusters / Cccfd68c47  4454665ace  07efce924f  75f / attach
 HTTP / 1 . 1
< Public   request   header >
{
    " password ": " Hello1234 ",
    " instances ": [
        " i - xxxx ",
        " i - yyyy "
    ]
}
```

Response sample

```
 HTTP / 1 . 1   202   Accepted
< Public   response   header >
{
    " list ": [
        {
            " code ": " 200 ",
            " instanceId ": " i - xxxx ",
            " message ": " successful "
        },
        {
            " code ": " 200 ",
            " instanceId ": " i - yyyy ",
            " message ": " successful "
        }
    ],
    " task_id ": " T - 5a544aff80  282e39ea00  0039 "
}
```

2.6 Obtain the cluster kubeconfig file

This topic describes how to obtain the kubeconfig file that is used to configure access to the Kubernetes cluster. The file contains the identity information of the current user.

Request information

Request line

```
 GET  / k8s /: clusterid / user_confi  g
```

Special request header

None. See *Public request headers*.

Response information

Response line

```
HTTP / 1 . 1  200  OK
```

Special response header

None. See *Public response headers*.

Response body

```
{
    " config ": " string "
}
```

Response body explanation

Name	Type	Description
config	String	Kubeconfig file used by the current user to access the cluster.

Example

Request example

```
GET  / k8s / c5b5e80b0b  64a4bf6939  d2d8fbbc5d  ed7 / user_confi  g
  HTTP / 1 . 1
< Public  request  header >
```

Response example

```
HTTP / 1 . 1  200  Ok
< Public  response  header >
{
    " config ": " xxxxxxxx "
}
```

2.7 View a cluster

View the cluster details according to the cluster ID.

Request Information

Request line (RequestLine)

```
GET  / clusters /{ cluster_id }  HTTP / 1 . 1
```

Request line parameter (URI Param)

Name	Type	Required	Description
cluster_id	string	Yes	Custer ID

Special request header (RequestHead)

None. See *Public request headers*.

Request body requestbody

None.

Return information

Response line (ResponseLine)

```
HTTP / 1 . 1   200   OK
```

Special response header (ResponseHead)

None. See *Public response headers*.

Response body (ResponseBody)

```
{
    " agent_vers  ion ": " string ",
    " cluster_id ": " string ",
    " created ": " datetime ",
    " external_l  oadbalance  r_id ": " string ",
    " master_url ": " string ",
    " name ": " string ",
    " network_mo  de ": " string ",
    " region_id ": " string ",
    " security_g  roup_id ": " string ",
    " size ": " numbers ",
    " state ": " string ",
    " updated ": " datetime ",
    " vpc_id ": " string ",
    " vswitch_id ": " string "
}
```

Response body explanation

Cluster format

Name	Type	Description
agent_vers ion	string	The Agent version.
cluster_id	string	The cluster ID, which is the unique identifier of the cluster.

Name	Type	Description
created	string	The creation time of the cluster.
external_loadbalancer_id	string	The Server Load Balancer instance ID of the cluster.
master_url	string	The master address of the cluster, which is used to connect to the cluster to perform operations. For more information, see *Access Kubernetes clusters by using SSH*.
name	string	The cluster name, which is specified when you create the cluster and is unique for each account.
network_mode	string	The network mode of the cluster (Virtual Private Cloud (VPC)).
region_id	string	The ID of the region where the cluster is located.
security_group_id	string	The security group ID.
size	string	The number of nodes.
state	string	The cluster status.
updated	string	The last update time.
vpc_id	string	The VPC ID.
vswitch_id	string	The VSwitch ID.

Examples

Request example

```
GET / clusters / C5b5e80b0b 64a4bf6939 d2d8fbbc5d ed7 HTTP / 1
. 1
< Public request header >
```

Response example

```
HTTP / 1 . 1 200 Ok
< Public response header >
{
```

```
    " agent_vers  ion ": " 0 . 5 - e56dab3 ",
    " cluster_id ": " c978ca3eaa  cd3409a943  7db07598f1  f69 ",
    " created ": " 2015 - 12 - 11T03 : 52 : 40Z ",
    " external_l  oadbalance  r_id ": " 1518f2b7e4  c - cn - beijing -
 btc - a01 ",
    " master_url ": " https :// 182 . 92 . 245 . 56 : 17589 ",
    " name ": " my - python - cluster - 039de960 ",
    " network_mo  de ": " vpc ",
    " region_id ": " cn - beijing ",
    " security_g  roup_id ": " sg - 25yqjuxhz ",
    " size ":  5 ,
    " state ": " running ",
    " updated ": " 2015 - 12 - 15T15 : 01 : 58Z ",
    " vpc_id ": "",
    " vswitch_id ": ""
}
```

2.8 View all clusters

View all the clusters you have created in Container Service, including swarm clusters and Kubernetes clusters.

Request information

Request line (RequestLine)

```
GET  / clusters  HTTP / 1 . 1
```

Special request header (RequestHead)

None. See *Public request headers*.

Request body (RequestBody)

None.

Response information

Response line (ResponseLine)

```
HTTP / 1 . 1  200  OK
```

Special response header (ResponseHead)

None. See *Public response headers*.

Response body (ResponseBody)

```
[
    {
        " agent_vers  ion ": " string ",
        " cluster_id ": " string ",
        " created ": " datetime ",
        " external_l  oadbalance  r_id ": " string ",
        " master_url ": " string ",
```

```
        " name ": " string ",
        " network_mo  de ": " string ",
        " region_id ": " string ",
        " security_g  roup_id ": " string ",
        " size ": " numbers ",
        " state ": " string ",
        " updated ": " datetime ",
        " vpc_id ": " string ",
        " vswitch_id ": " string "
    }
]
```

Response body explanation

Cluster format

Name	Type	Description
agent_vers ion	string	The Agent version.
cluster_id	string	The cluster ID, which is the unique identifier of the cluster.
created	string	The creation time of the cluster.
external_l oadbalance r_id	string	The Server Load Balancer instance ID of the cluster.
master_url	string	The master address of the cluster, which is used to connect to the cluster to perform operations. For more information, see *Connect to a Kubernetes cluster by using kubectl*.
name	string	The cluster name, which is specified when you create the cluster and is unique for each account.
network_mo de	string	The network mode of the cluster (Virtual Private Cloud (VPC)).
region_id	string	The ID of the region where the cluster is located.
security_g roup_id	string	The security group ID.
size	string	The number of nodes.

Name	Type	Description
state	string	The cluster status. For more information, see *Cluster lifecycle*.
updated	string	The last update time.
vpc_id	string	The VPC ID.
vswitch_id	string	The VSwitch ID.

Example

Request example

```
 GET  / clusters   HTTP / 1 . 1
< Public   request   header >
```

Response example

```
 HTTP / 1 . 1   200   OK
< Public   response   header >
[
    {
        " agent_vers  ion ": " 0 . 5 - e56dab3 ",
        " cluster_id ": " c978ca3eaa  cd3409a943  7db07598f1  f69 ",
        " created ": " 2015 - 12 - 11T03 : 52 : 40Z ",
        " external_l  oadbalance  r_id ": " 1518f2b7e4  c - cn -
 beijing - btc - a01 ",
        " master_url ": " https :// 182 . 92 . 245 . 56 : 17589 ",
        " name ": " my - python - cluster - 039de960 ",
        " network_mo  de ": " vpc ",
        " region_id ": " cn - beijing ",
        " security_g  roup_id ": " sg - 25yqjuxhz ",
        " size ":  5 ,
        " state ": " running ",
        " updated ": " 2015 - 12 - 15T15 : 01 : 58Z ",
        " vpc_id ": "",
        " vswitch_id ": ""
    },
    {
        " agent_vers  ion ": " 0 . 5 - e56dab3 ",
        " cluster_id ": " c1eb19e009  3204cbb86c  3a80334d21  29e ",
        " created ": " 2015 - 12 - 15T14 : 26 : 58Z ",
        " external_l  oadbalance  r_id ": " 151a6099de  1 - cn -
 beijing - btc - a01 ",
        " master_url ": " https :// 182 . 92 . 245 . 56 : 11905 ",
        " name ": " my - test - cluster - 002b3f3d ",
        " network_mo  de ": " vpc ",
        " region_id ": " cn - beijing ",
        " security_g  roup_id ": " sg - 25rg2ws9f ",
        " size ":  1 ,
        " state ": " running ",
        " updated ": " 2015 - 12 - 15T14 : 43 : 55Z ",
        " vpc_id ": "",
        " vswitch_id ": ""
    }
```

```
]
```

2.9 Create a multi-zone Kubernetes cluster

This topic describes how to create a highly available Kubernetes cluster across zones with a specified number of nodes.

Request information

Request line

```
POST  / clusters   HTTP / 1 . 1
```

Special request header

None. See *Public request headers*.

Request body

```
{
    " disable_ro  llback ": " whether   or   not   to   roll   back
 if   the   cluster   fails   to   be   scaled   out   or   in ",
    " name ": " cluster   name ",
    " timeout_mi  ns ": " timeout   for   creating   the   cluster ",
    " cluster_ty  pe ": " Kubernetes ",
    " region_id ": " region ",
    " multi_az ":  true ,
    " vpcid ": " VPC   ID  ",
    " container_  cidr ": " pod   Classless   Inter - Domain   Routing
  ( CIDR )",
    " service_ci  dr ": " service   CIDR ",
    " vswitch_id  _a ": " switch   ID   of   the   first   available
 zone ",
    " vswitch_id  _b ": " switch   ID   of   the   second   available
  zone ",
    " vswitch_id  _c ": " switch   ID   of   the   third   available
 zone ",
    " master_ins  tance_type  _a ": " specificat  ion   of   instance
  on   the   master   node   in   the   first   available   zone ",
    " master_ins  tance_type  _b ": " specificat  ion   of   instance
  on   the   master   node   in   the   second   available   zone ",
    " master_ins  tance_type  _c ": " specificat  ion   of   instance
  on   the   master   node   in   the   third   available   zone ",
    " master_sys  tem_disk_c  ategory ": " master   node   system
 disk   type ",
    " master_sys  tem_disk_s  ize ": " master   node   system   disk
 size ",
    " worker_ins  tance_type  _a ": " specificat  ion   of   instance
  on   the   worker   node   in   the   first   available   zone ",
    " worker_ins  tance_type  _b ": " specificat  ion   of   instance
  on   the   worker   node   in   the   second   available   zone ",
    " worker_ins  tance_type  _c ": " specificat  ion   of   instance
  on   the   worker   node   in   the   third   available   zone ",
    " worker_sys  tem_disk_c  ategory ": " system   disk   type   of
 worker   nodes ",
    " worker_sys  tem_disk_s  ize ": " system   disk   size   of
 worker   nodes ",
```

```
    " num_of_nod  es_a ": " number   of   worker   nodes   in   the
 first   available   zone ",
    " num_of_nod  es_b ": " number   of   worker   nodes   in   the
 second   available   zone ",
    " num_of_nod  es_c ": " number   of   worker   nodes   in   the
 third   available   zone ",
    " ssh_flags ": " whether   or   not   to   enable   SSH   access
 for   Internet ",
    " login_pass  word ": " SSH   login   password ",            "
 cloud_moni  tor_flags ":" whether   or   not   to   install   a
 cloud   monitor   plug - in "
}
```

Request body explanation

Name	Type	Required	Description
disable_rollback	bool	No	Whether or not to roll back if the cluster fails to be scaled out or in. true indicates to not roll back and false indicates to roll back. Resources generated in the creation process are released if you select to roll back. We do not recommend that you use false .
name	string	Yes	The cluster name, which can contain uppercase English letters, lowercase English letters, Chinese characters , numbers, and hyphens (-).
timeout_mins	int	Yes	The timeout (in minutes) for creating the cluster resource stack. The default value is 60 .

Name	Type	Required	Description
region_id	string	Yes	The ID of the region in which the cluster resides.
multi_az	bool	Yes	Highly available cluster type, which is fixed at true .
vpcid	string	Yes	VPCID
container_ cidr	string	No	The pod CIDR block , which cannot conflict with the VPC CIDR block. If you choose to allow the system to automatically create a VPC, the CIDR block 172.16 .0.0/16 is used by default.
service_ci dr	string	No	The service CIDR block, which cannot conflict with the VPC CIDR block or the pod CIDR block. If you choose to allow the system to automatically create a VPC, the 172.19.0.0/20 CIDR block is used by default.
vswitch_id _a	string	Yes	Switch ID of the first available zone
vswitch_id _b	string	Yes	Switch ID of the second available zone
vswitch_id _c	string	Yes	Switch ID of the third available zone

Name	Type	Required	Description
master_instance_type_a	string	Yes	The specification type code of ECS on the master node in the first available zone. For more information, see *Instance type families*.
master_instance_type_b	string	Yes	The specification type code of ECS on the master node in the second available zone. For more information, see *Instance type families*.
master_instance_type_c	string	Yes	The specification type code of ECS on the master node in the third available zone. For more information, see *Instance type families*.
master_system_disk_category	string	Yes	Master node system disk type.
master_system_disk_size	int	Yes	Master node system disk size
worker_instance_type_a	string	Yes	The specification type code of ECS on the worker node in the first available zone. For more information, see *Instance type families*.

Name	Type	Required	Description
worker_instance_type_b	string	Yes	The specification type code of ECS on the worker node in the second available zone. For more information, see *Instance type families*.
worker_instance_type_c	string	Yes	The specification type code of ECS on the worker node in the third available zone. For more information, see *Instance type families*.
worker_system_disk_category	string	Yes	The system disk type of the worker nodes.
worker_system_disk_size	int	Yes	The system disk size of the worker nodes.
num_of_nodes_a	int	Yes	The first number of free zone worker nodes. The range is [1,300].
num_of_nodes_b	int	Yes	The number of worker nodes in the second available zone. The range is [1,300].
num_of_nodes_c	int	Yes	The number of worker nodes in the third available zone. The range is [1,300].

Name	Type	Required	Description
login_password	string	Yes	SSH login password. The password must be 8-30 characters long and contain three types of characters (uppercase/ lowercase letters, numbers, and special characters) This parameter is exclusive with key_pair .
key_pair	string	Yes	The keypair name. This parameter is exclusive with login_password .
ssh_flags	bool	No	Whether or not to enable SSH access for Internet
cloud_monitor_flags	bool	No	Whether or not to install a cloud monitoring plug-in

API note

- You first need to include at least three switches under a single VPC. To guarantee high availability, we recommend that you distribute the three switches in different available zones.
- The switches to be used by the cluster must have access capability (you can use the nat gateway to configure SNAT rules or use the ECS as a network proxy. We recommend that you use the nat gateway to configure SNAT rules)

Return information

Response line

```
HTTP / 1 . 1  202  Accepted
```

Special response header

None. See *Public response headers*.

Response body

```
{
    " cluster_id ":" string ",
    " request_id ":" string ",
    " task_id ":" string "
}
```

Examples

Request example

```
POST  / clusters  HTTP / 1 . 1
< Public  request  header >
{
    " disable_ro  llback ":  true ,
    " name ": " mulit - az - cluster ",
    " timeout_mi  ns ":  60 ,
    " cluster_ty  pe ": " Kubernetes ",
    " region_id ": " cn - shanghai ",
    " multi_az ":  true ,
    " container_  cidr ": " 10 . 4 . 0 . 0 / 16 ",
    " service_ci  dr ": " 10 . 3 . 0 . 0 / 20 ",
    " vpcid ": " vpc - mytestvpc ",
    " vswitch_id  _a ": " vsw - a ",
    " vswitch_id  _b ": " vsw - b ",
    " vswitch_id  _c ": " vsw - c ",
    " master_ins  tance_type  _a ": " ecs . c5 . large ",
    " master_ins  tance_type  _b ": " ecs . d1 . 2xlarge ",
    " master_ins  tance_type  _c ": " ecs . c4 . xlarge ",
    " master_sys  tem_disk_c  ategory ": " cloud_effi  ciency ",
    " master_sys  tem_disk_s  ize ":  40 ,
    " worker_ins  tance_type  _a ": " ecs . c5 . large ",
    " worker_ins  tance_type  _b ": " ecs . d1 . 2xlarge ",
    " worker_ins  tance_type  _c ": " ecs . c4 . xlarge ",
    " worker_sys  tem_disk_c  ategory ": " cloud_effi  ciency ",
    " worker_sys  tem_disk_s  ize ":  40 ,
    " num_of_nod  es_a ":  2 ,
    " num_of_nod  es_b ":  2 ,
    " num_of_nod  es_c ":  2 ,
    " ssh_flags ":  true ,
    " login_pass  word ": " Hello1234 ",
    " cloud_moni  tor_flags ":  true
}
```

Response example

```
HTTP / 1 . 1  202  Accepted
```

```
< Public   response   header >
{
    " cluster_id ": " cb95aa626a  47740afbf6  aa099b650d  7ce ",
    " request_id ": " 687C5BAA - D103 - 4993 - 884B - C35E4314A1  E1
 ",
    " task_id ": " T - 5a54309c80  282e39ea00  002f "
}
```

2.10 Scale out or in a cluster

Add or remove worker nodes to or from the cluster (this operation only applies to the resources created by Resource Orchestration Service (ROS)).

Request information

Request line (RequestLine)

```
 PUT  / clusters /{ cluster_id }  HTTP / 1 . 1
```

Request line parameter (URI Param)

Name	Type	Required	Description
cluster_id	string	Yes	The cluster ID.

Special request header (RequestHead)

None. See *Public request headers* .

Request body (RequestBody)

```
{
    " disable_ro  llback ": " whether   or   not   to   roll   back
 if   the   cluster   fails   to   be   scaled   out   or   in ",
    " timeout_mi  ns ": " timeout   for   creating   the   cluster ",
    " worker_ins  tance_type ": " instance   type   of   worker
 nodes ",
    " login_pass  word ": " password   used   to   log   on   to   the
   node   by   using   SSH ",
    " num_of_nod  es ": " number   of   worker   nodes "
}
```

Request body explanation

Name	Type	Required	Description
disable_rollback	bool	Yes	Whether or not to roll back if the cluster fails to be scaled out or in. true indicates to not roll back and false indicates to roll back. Resources generated in the creation process are released if you select to roll back. We do not recommend that you use false .
timeout_mins	int	Yes	The timeout (in minutes) for creating the cluster resource stack. The default value is 60 .
worker_instance_type	string	Yes	The Elastic Compute Service (ECS) instance type code of the worker nodes. For more information, see *Instance type families*.

Name	Type	Required	Description
login_password	string	Yes	The SSH logon password, which is 8–30 characters long and must contain uppercase letters/lowercase letters, numbers, and special characters at the same time. This password must be the same as that specified when you create the cluster.  Note: login_password and num_of_nodes are mutually exclusive. Regardless of which of the two parameters is configured, it must be consistent with the parameter configured when the cluster is created.

Name	Type	Required	Description
num_of_nodes	int	Yes	The number of worker nodes. The value range is [0,300]. To scale out a cluster, this value must be larger than the number of existing worker nodes in the cluster. To scale in a cluster, this value must be smaller than the number of existing worker nodes in the cluster.  Note: login_password and num_of_nodes are mutually exclusive. Regardless of which of the two parameters is configured, it must be consistent with the parameter configured when the cluster is created.

Response information

Response line

```
HTTP/1.1 202 Accepted
```

Special response head

None. See *Public request headers*.

Response body (ResponseBody)

```
{
    " cluster_id ":" string ",
    " request_id ":" string ",
    " task_id ":" string "
}
```

Examples

Request example

```
 PUT  / clusters / Cccfd68c47  4454665ace  07efce924f  75f   HTTP / 1
 . 1
< Public   request   header >
{
    " disable_ro  llback ":  true ,
    " timeout_mi  ns ":  60 ,
    " worker_ins  tance_type ": " ecs . sn1ne . large ",
    " login_pass  word ": " Hello1234 "
}
```

Response example

```
 HTTP / 1 . 1   202   Accepted
< Public   response   header >
{
    " cluster_id ": " Cccfd68c47  4454665ace  07efce924f  75f ",
    " request_id ": " 687C5BAA - D103 - 4993 - 884B - C35E4314A1  E1
 ",
    " task_id ": " T - 5a54309c80  282e39ea00  002f "
}
```

2.11 Delete a cluster

This topic describes how to delete a cluster according to the cluster ID and release all node resources.

Request information

Request line

```
 DELETE  / clusters /{ cluster_id }  HTTP / 1 . 1
```

Request line parameter (URI Param)

Name	Type	Required	Description
cluster_id	String	Yes	Custer ID

Special request header

None. See *Public request headers*.

Request body

None.

Response information

Response line

```
HTTP / 1 . 1  202  Accepted
```

Special response header

None. See *Public response headers*.

Response body

None

Example

Request example

```
DELETE / clusters / Cccfd68c47 4454665ace 07efce924f 75f HTTP /
1 . 1
< Public  request  header >
```

Response sample

```
HTTP / 1 . 1  202  Accepted
< Public  response  header >
```

3 Use Container Service through CLI

3.1 View all clusters

This topic describes how to views all the clusters that you have created through Alibaba Cloud Container Service for Kubernetes.

API request and response

Request format

```
aliyun cs GET / clusters
```

Response result

```
[
    {
        " agent_vers  ion ": " string ",
        " cluster_id ": " string ",
        " created ": " datetime ",
        " external_l  oadbalance  r_id ": " string ",
        " master_url ": " string ",
        " name ": " string ",
        " network_mo  de ": " string ",
        " region_id ": " string ",
        " security_g  roup_id ": " string ",
        " size ": " numbers ",
        " state ": " string ",
        " updated ": " datetime ",
        " vpc_id ": " string ",
        " vswitch_id ": " string "
    }
]
```

3.2 View cluster information

This topic describes how to view the cluster details according to the cluster ID. For API descriptions, see *View a cluster*.

API request and response

Request format

```
aliyun cs GET / clusters /< cluster_id >
```

Response result

```
{
    " agent_vers  ion ": " string ",
    " cluster_id ": " string ",
```

```
    " created ": " datetime ",
    " external_l  oadbalance  r_id ": " string ",
    " master_url ": " string ",
    " name ": " string ",
    " network_mo  de ": " string ",
    " region_id ": " string ",
    " security_g  roup_id ": " string ",
    " size ": " numbers ",
    " state ": " string ",
    " updated ": " datetime ",
    " vpc_id ": " string ",
    " vswitch_id ": " string "
}
```

3.3 Create a cluster

This topic describes how to create a cluster and the specified number of nodes. For API descriptions, see *Create a Kubernetes cluster*, *Create a multi-zone Kubernetes cluster*, and *Create a multi-zone Kubernetes cluster*.

API request and response

Request format

```
aliyun   cs    POST  / clusters  -- header  " Content - Type =
applicatio  n / json " -- body  "$( cat   create . json )"
```

Parameter descriptions:

- `-- header` : Specify `Content - Type` as `applicatio  n / json .`
- `-- body` : This is the body content to be sent to the server. The content can be read from a local file and must be in JSON format. The content of `create . json` is as follows:

Kubernetes cluster with a single zone

```
{
" disable_ro  llback ": " indicates   whether   to   roll   back   the
   cluster   if   the   cluster   creation   fails "
" name ": " cluster   name "
" timeout_mi  ns ": " cluster   creation   timeout "
" cluster_ty  pe ": " Kubernetes "
" region_id ": " region "
" vpcid ": " Virtual   Private   Cloud  ( VPC )  ID "
" zoneid ": " zone "
" vswitchid ": " VSwitch   ID "
" container_  cidr ": " pod   Classless   Inter - Domain   Routing  (
 CIDR )"
" service_ci  dr ": " service   CIDR "
" ssh_flags ": " whether   to   enable   SSH   access   over   the
 Internet "
" cloud_moni  tor_flags ":" whether   to   install   the   cloud
 monitoring   plugin "
```

```
" login_pass  word ": " password   used   to   log   on   to   the
 node   by   using   SSH .  Use   either   this   parameter   or   the
   key_pair "
" key_pair ":" key   pair   name .  Use   either   this   parameter
 or   login_pass  word "
" master_ins  tance_char  ge_type ":" Master   instance   payment
 type   that   includes   PostPaid   and   PrePaid "
" master_per  iod_unit ":" Subscripti  on   unit   that   includes
 Month   and   Year .  This   parameter   takes   effect   only   for
   the   PrePaid   payment   type "
" master_per  iod ":" Subscripti  on   period ,  which   takes
 effect   only   for   the   PrePaid   payment   type "
" master_aut  o_renew ":" whether   to   enable   Master   node
 automatic   renew "
" master_aut  o_renew_pe  riod ":" Master   node   renew   period "
" master_ins  tance_type ": " Master   instance   type "
" master_sys  tem_disk_c  ategory ": " Master   node   system   disk
 type "
" master_sys  tem_disk_s  ize ":" Master   node   system   disk   size
 "
" master_dat  a_disk ":" whether   to   mount   data   disks   to
 the   Master   node "
" master_sys  tem_disk_c  ategory ": " Master   node   data   disk
 type "
" master_sys  tem_disk_s  ize ":" Master   node   data   disk   size "
" worker_ins  tance_char  ge_type ":" Worker   node   payment   type
 that   includes   PrePaid   and   PostPaid "
" worker_per  iod_unit ":" Subscripti  on   unit   that   includes
 Month   and   Year .  This   parameter   takes   effect   only   for
   the   PrePaid   payment   type "
" worker_per  iod ":" Subscripti  on   period   that   takes   effect
   only   for   the   PrePaid   payment   type "
" worker_aut  o_renew ":" whether   to   enable   Worker   node
 automatic   renew .  Available   values   are   true   and   false ."
" worker_aut  o_renew_pe  riod ":" Worker   node   renew   period "
" worker_ins  tance_type ": " Worker   instance   type "
" worker_sys  tem_disk_c  ategory ": " Worker   node   system   disk
 type "
" worker_sys  tem_disk_s  ize ": " Worker   node   system   disk
 size "
" worker_dat  a_disk ":" whether   to   mount   data   disks   to
 the   Worker   node "
" worker_dat  a_disk_cat  egory ":" Worker   node   data   disk   type
 "
" worker_dat  a_disk_siz  e ":" Worker   node   data   disk   size "
" num_of_nod  es ": " number   of   Worker   nodes "
" snat_entry ": " whether   to   set   an   SNAT   entry "
" public_slb ":" whether   to   create   the   SLB   correspond  ing
 to   the   Internet   API   server "
}
```

Kubernetes cluster with multiple zones

```
{
" disable_ro  llback ": " indicates   whether   to   roll   back   the
   cluster   if   the   cluster   creation   fails "
" name ": " cluster   name "
" timeout_mi  ns ": " cluster   creation   timeout "
" cluster_ty  pe ": " Kubernetes "
" region_id ": " region "
" multi_az ":  true
" vpcid ": " VPC   ID  "
" container_  cidr ": " pod   CIDR   block "
```

```
" service_ci  dr ": " service   CIDR   block "
" vswitch_id  _a ": " ID   of   the   VSwitch   in   the   first
 zone "
" vswitch_id  _b ": " ID   of   the   VSwitch   in   the   second
 zone "
" vswitch_id  _c ": " ID   of   the   VSwitch   in   the   third
 zone "
" master_ins  tance_type  _a ": " instance   type   of   the   Master
   node   in   the   first   zone "
" master_ins  tance_type  _b ": " instance   type   of   the   Master
   node   in   the   second   zone "
" master_ins  tance_type  _c ": " instance   type   of   the   Master
   node   in   the   third   zone "
" master_ins  tance_char  ge_type ":" Master   instance   payment
 type   that   includes   PostPaid   and   PrePaid "
" master_per  iod_unit ":" Subscripti  on   unit   that   includes
 Month   and   Year .  This   parameter   takes   effect   only   for
   the   PrePaid   payment   type "
" master_per  iod ":" Subscripti  on   period   that   takes   effect
   only   for   the   PrePaid   payment   type "
" master_aut  o_renew ":" whether   to   enable   Master   node
 automatic   renew "
" master_aut  o_renew_pe  riod ":" Master   node   renew   period "
" master_sys  tem_disk_c  ategory ": " Master   node   system   disk
 type "
" master_sys  tem_disk_s  ize ": " Master   node   system   disk
 size "
" master_dat  a_disk ":" whether   to   mount   data   disks   to
 the   Master   node "
" master_dat  a_disk_cat  egory ":" Master   node   data   disk   type
 "
" master_dat  a_disk_siz  e ":" Master   node   data   disk   size "
" worker_ins  tance_type  _a ": " instance   type   of   the   Worker
   node   in   the   first   zone "
" worker_ins  tance_type  _b ": " instance   type   of   the   Worker
   node   in   the   second   zone "
" worker_ins  tance_type  _c ": " instance   type   of   the   Worker
   node   in   the   third   zone "
" worker_ins  tance_char  ge_type ":" Worker   node   payment   type
 that   includes   PrePaid   and   PostPaid "
" worker_per  iod_unit ":" Subscripti  on   unit   that   includes
 Month   and   Year .  This   parameter   takes   effect   only   for
   the   PrePaid   payment   type "
" worker_per  iod ":" Subscripti  on   period   that   takes   effect
   only   for   the   PrePaid   payment   type ."
" worker_aut  o_renew ":" whether   to   enable   Worker   node
 automatic   renew .  Available   values   are   true   and   false ."
" worker_aut  o_renew_pe  riod ":" Worker   node   renew   period "
" worker_sys  tem_disk_c  ategory ": " Worker   node   system   disk
 type "
" worker_sys  tem_disk_s  ize ": " Worker   node   system   disk
 size "
" worker_dat  a_disk ":" whether   to   mount   data   disks   to
 the   Worker   node "
" worker_dat  a_disk_cat  egory ":" Worker   node   data   disk   type
 "
" worker_dat  a_disk_siz  e ":" Worker   node   data   disk   size "
" num_of_nod  es_a ": " number   of   Worker   nodes   in   the
 first   zone "
" num_of_nod  es_b ": " number   of   Worker   nodes   in   the
 second   zone "
" num_of_nod  es_c ": " number   of   Worker   nodes   in   the
 third   zone "
```

```
" ssh_flags ": " whether   to   enable   SSH   access   over   the
 Internet "
" login_pass  word ": " SSH   logon   password "
" cloud_moni  tor_flags ":" whether   to   install   the   cloud
 monitoring   plugin "
" public_slb ":" whether   to   create   the   SLB   correspond  ing
 to   the   Internet   API   server "
}
```

Managed Kubernetes cluster

```
{
" disable_ro  llback ": " indicates   whether   to   roll   back   the
   cluster   if   the   cluster   creation   fails "
" name ": " cluster   name "
" timeout_mi  ns ": " cluster   creation   timeout "
" cluster_ty  pe ": " ManagedKub  ernetes "
" region_id ": " region .  Available   values   are   cn - beijing
 and   cn - hangzhou "
" vpcid ": " VPC   ID  "
" zoneid ": " zone "
" vswitchid ": " VSwitch   ID "
" container_  cidr ": " pod   CIDR   block "
" service_ci  dr ": " service   CIDR   block "
" cloud_moni  tor_flags ":" whether   to   install   the   cloud
 monitoring   plugin "
" login_pass  word ": " password   used   to   log   on   to   the
 node   by   using   SSH .  Use   either   this   parameter   or   the
   key_pair ."
" key_pair ":" key   pair   name .  use   either   this   parameter
 or   login_pass  word ."
" worker_ins  tance_char  ge_type ":" Worker   node   payment   type
 that   includes   PrePaid   and   PostPaid "
" worker_per  iod_unit ":" Subscripti  on   unit   that   includes
 Month   and   Year .  This   parameter   takes   effect   only   for
   the   PrePaid   payment   type "
" worker_per  iod ":" Subscripti  on   period ,  which   takes
 effect   only   for   the   PrePaid   payment   type ."
" worker_aut  o_renew ":" whether   to   enable   Worker   node
 automatic   renew .  Available   values   are   true   and   false ."
" worker_aut  o_renew_pe  riod ":" Worker   node   renew   period "
" worker_ins  tance_type ": " Worker   instance   type "
" worker_sys  tem_disk_c  ategory ": " Worker   node   system   disk
 type "
" worker_sys  tem_disk_s  ize ": " Worker   node   system   disk
 size "
" worker_dat  a_disk ":" whether   to   mount   data   disks   to
 the   worker   node .  Available   values   are   true   and   false
 ."
" worker_dat  a_disk_cat  egory ":" data   disk   type "
" worker_dat  a_disk_siz  e ":" data   disk   size "
" num_of_nod  es ": " number   of   worker   nodes "
" snat_entry ": " whether   to   set   an   SNAT   entry "
} ntry ":  whether   to   set   an   SNAT   entry
   }
```

Response result

```
{
    " cluster_id ": " c61cf53052  4474386a7a  b5a1c192a0  d57 "
    " request_id ": " 348D4C9C - 9105 - 4A1B - A86E - B58F0F8755  75 "
    " task_id ": " T - 5ad724ab94  a2b109e800  0004 "
```

```
}
```

3.4 Expand a cluster

This topic describes how to increase the number of nodes in the cluster. For API descriptions, see *Scale out or in a cluster*.

API request and response

Request format

```
aliyun cs PUT / clusters /< cluster_id > -- header " Content -
Type = applicatio n / json " -- body "$( cat scale . json )"
```

Parameter descriptions:

- `-- header` : Specify `Content - Type` as `applicatio n / json .`
- `-- body` : This is the body content to be sent to the server. The content can be read from a local file and must be in JSON format. The content of `scale . json` is as follows:

Kubernetes cluster

```
{ " disable_ro llback ": " indicates whether to roll back
 the cluster if cluster expansion fails ",
" timeout_mi ns ": " timeout period for creating a cluster
 ",

" worker_ins tance_type ": " Worker instance type ",
" login_pass word ": " password used to log on to the
 node by using SSH ",
" num_of_nod es ": " number of Worker nodes "
}
```

Response result

```
{
    " cluster_id ": " c61cf53052 4474386a7a b5a1c192a0 d57 ",
    " request_id ": " 348D4C9C - 9105 - 4A1B - A86E - B58F0F8755 75
 ",
    " task_id ": " T - 5ad724ab94 a2b109e800 0004 "
```

```
}
```

3.5 Add existing ECS instances to a cluster

This topic describes how to add existing ECS instances to a cluster. For API descriptions, see *Add existing ECS instances to a Kubernetes cluster*.

API request and response

Request format

```
aliyun cs POST / clusters /< cluster_id >/ attach -- header "
Content - Type = applicatio n / json " -- body "$( cat attach .
json )"
```

Parameter description:

- `-- header` : Specify `Content - Type` as `applicatio n / json .`
- `-- body` : This is the body content to be sent to the server. The content can be read from a local file and must be in JSON format. The content of `attach . json` is as follows:

```
{
        " password ": " password used to log on to the
 ECS instance by using SSH ",
        " instances ": " ECS instance array ",
        " ecs_image_ id ": " image ID ",
        " release_ei p_flag ": " whether to release Elastic
 IP ( EIP ) after you configure the cluster "
}
```

Response result

```
{
    " list ": [
        {
            " code ": " 200 ",
            " instanceId ": " i - 2zee3oiwcy oz7kwdo8bt ",
            " message ": " successful "
        },
        {
            " code ": " 200 ",
            " instanceId ": " i - 2ze0lgm3y6 iylcbtcypf ",
            " message ": " successful "
        }
    ],
    " task_id ": " T - 5a544aff80 282e39ea00 0039 "
```

```
}
```

3.6 Delete a cluster

This topic describes how to delete a cluster according to the cluster ID, and release all node resources of the cluster. For API descriptions, see *Delete a cluster*.

API request and response

Request format

```
aliyun cs DELETE / clusters /< cluster_id >
```

Response result

None.