Alibaba Cloud
Container Service for Kubernetes

developer guide

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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.	 **Note:** 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]`*
{} or {a|b}	It indicates that it is a required value, and only one item can be selected.	`swich` *`{stand | slave}`*

Contents

1 Kubernetes API 参考

1.1 集群 API 调用方式

1.1.1 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. *#unique_6*
2. *#unique_7*
3. *#unique_8*
4. *#unique_9*

1.1.2 公共参数

公共请求头部

公共请求参数是指每个接口都需要使用到的请求参数。

参数名称	说明	选项
Authorization	用于验证请求合法性的认证信息，采用 `AccessKeyId:Signature` 的形式。	Required
Content-Length	RFC 2616 中定义的 HTTP 请求内容长度。	Required
Content-Type	RFC 2616 中定义的 HTTP 请求内容类型。	Required
Content-MD5	HTTP 协议消息体的 128-bit MD5 散列值转换成 BASE64 编码的结果。为了防止所有请求被篡改，建议所有请求都附加该信息。	Required
Date	请求的构造时间，目前只支持 GMT 格式。如果与 MNS 的服务器时间前后差异超过 15 分钟将返回本次请求非法。	Required

参数名称	说明	选项
Host	访问 Host 值，例如：diku.aliyuncs.com。	Required
Accept	客户端需要的返回值类型，支持 application/json 和 application/xml。	Required
x-acs-version	API 版本号。目前版本号为 2015-12-15。	Required
x-acs-region-id	地域（Region）指的是 ECS 实例所在的物理位置。	Required
x-acs-signature-nonce	唯一随机数，用于防止网络重放攻击。您在不同请求间要使用不同的随机数值。	Required
x-acs-signature-method	用户签名方式，目前只支持 HMAC-SHA1。	Required

示例

```
GET /clusters HTTP/1.1
Host: cs.aliyuncs.com
Accept: application/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-ea8fde61eae3
Authorization: acs ACSbW2iBbyX0Pk9N:mp/6Wdr18V3qAc5gbgsqMe/iB0c
x-acs-signature-version: 1.0
Date: Wed, 16 Dec 2015 11:18:47 GMT
x-acs-signature-method: HMAC-SHA1
Content-Type: application/json;charset=utf-8
X-Acs-Region-Id: cn-beijing
Content-Length: 0
```

公共返回头部

您发送的每次接口调用请求，无论成功与否，系统都会返回一个唯一识别码 RequestId。

示例

XML 示例：

```
<?xml version="1.0" encoding="UTF-8"?>
<!—结果的根结点-->
<接口名称+Response>
  | <!—返回请求标签-->
  | <RequestId>4C467B38-3910-447D-87BC-AC049166F216</RequestId>
  | <!—返回结果数据-->
```

```
</接口名称+Response>
```

JSON 示例：

```
{
    "RequestId": "4C467B38-3910-447D-87BC-AC049166F216"
    /* 返回结果数据 */
}
```

1.1.3 请求结构

服务地址

阿里云容器服务的 Open API 接入地址为 cs.aliyuncs.com。

通信协议

支持通过 HTTP 或 HTTPS 通道进行请求通信。为了获得更高的安全性，推荐您使用 HTTPS 通道发送请求。

请求方法

使用 HTTP 的 PUT、 POST、 GET、 DELETE 等 HTTP Method 发送不同的请求。

请求参数

每个请求都需要包含公共请求参数和指定操作所特有的请求参数。

请求编码

请求及返回结果都使用 UTF-8 字符集进行编码。

1.1.4 返回参数

调用 API 服务后返回数据采用统一格式。返回的 HTTP 状态码为 `2xx`，代表调用成功；返回的 HTTP 状态码为 `4xx` 或 `5xx`，代表调用失败。调用成功返回的数据格式主要有 XML 和 JSON 两种，外部系统可以在请求时传入参数来制定返回的数据格式，默认为 XML 格式。

为了便于您查看，本文档中的返回示例做了格式化处理，实际返回结果是没有换行、缩进等处理的。

1.1.5 签名机制

签名机制说明

Access Key ID 和 Access Key Secret 由阿里云官方颁发给访问者（可以通过阿里云官方网站申请和管理），其中 Access Key ID 用于标识访问者的身份；Access Key Secret 是用于加密签名字符串和服务器端验证签名字符串的密钥，必须严格保密，只有阿里云和用户知道。

容器服务会对每个访问的请求进行验证，每个向容器服务提交的请求，都需要在请求中包含签名（Signature）信息。容器服务通过使用 Access Key ID 和 Access Key Secret 进行对称加密的方法来验证请求的发送者身份。如果计算出来的验证码和提供的一样即认为该请求是有效的；否则，容器服务将拒绝处理这次请求，并返回 HTTP 403 错误。

用户可以在 HTTP 请求中增加授权（Authorization）的 Head 来包含签名信息，表明这个消息已被授权。

容器服务要求将签名包含在 HTTP Header 中，格式为 `Authorization: acs [Access Key Id]:[Signature]`。

`Signature` 的计算方法如下：

```
Signature = base64(hmac-sha1(VERB + "\n"
            + ACCEPT + "\n" +
            + Content-MD5 + "\n"
            + Content-Type + "\n"
            + Date + "\n"
            + CanonicalizedHeaders + "\n"
            + CanonicalizedResource))
```

- `VERB` 表示 HTTP 的 Method。比如示例中的 `PUT`。
- `Accept` 客户端需要的返回值类型，支持 application/json 和 application/xml。
- `Content-MD5` 表示请求内容数据的 MD5 值。
- `Content-Type` 表示请求内容的类型。
- `Date` 表示此次操作的时间，不能为空，目前只支持 GMT 格式。如果请求时间与 CAS 服务器时间相差超过 1 5分钟，CAS 会判定此请求不合法，并返回 400 错误。错误信息及错误码详见本文档第 5 部分。比如示例中的 `Thu, 17 Mar 2012 18:49:58 GMT`。
- `CanonicalizedHeaders` 表示 HTTP 中以 `x-acs-` 开始的字段组合。
- `CanonicalizedResource` 表示 HTTP 所请求资源的 URI (统一资源标识符)。比如示例中的 `/clusters?name=my-clusters&resource=new`。

说明：

`CanonicalizedHeaders`（即以 `x-acs-` 开头的 header）在签名验证前需要符合以下规范:

1. 将所有以 `x-acs-` 为前缀的 HTTP 请求头的名字转换成小写字母。比如将 `X-ACS-Meta-Name: TaoBao` 转换为 `x-acs-meta-name: TaoBao`。阿里云规范请求头的名字是大小写不敏感的，建议全部使用小写。
2. 如果一个公共请求头的值部分过长，则需要处理其中的 `\t`、`\n`、`\r`、`\f`分隔符，将其替换为英文半角的空格。
3. 将上一步得到的所有 HTTP 阿里云规范头按照字典序进行升序排列。

4. 删除请求头和内容之间分隔符两端出现的任何空格。比如将 `x-acs-meta-name: TaoBao, Alipay` 转换为 `x-acs-meta-name:TaoBao,Alipay`。
5. 将所有的头和内容用 `\n` 分隔符分隔拼成最后的 CanonicalizedHeaders。

说明：

`CanonicalizedResource` 的格式规范: `CanonicalizedResource` 表示客户想要访问资源的规范描述，需要将子资源和 qurey 一同按照字典序，从小到大排列并以 & 为分隔符生成子资源字符串（？后的所有参数）。

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

`CanonicalizedResource` 应该为：

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

签名示例

示例概述

您可以通过该示例，了解加签的步骤。

示例使用的 accessKeyId 和 accessKeySecret 分别为 `access_key_id` 和 `access_key_secret`。推荐您使用自己的 OpenAPI 调用程序，来计算下面这个示例的加签串，您自己的加签结果和示例结果。

请求的示例如下：

```
POST http://cs.aliyuncs.com/clusters?param1=value1&param2=value2 HTTP/
1.1
Accept-Encoding: identity
Content-Length: 210
Content-MD5: 6U4ALMkKSj0PYbeQSHqgmA==
x-acs-version: 2015-12-15
Accept: application/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-3e03a7916799
x-acs-signature-version: 1.0
Date: Wed, 16 Dec 2015 12:20:18 GMT
x-acs-signature-method: HMAC-SHA1
Content-Type: application/json;charset=utf-8
X-Acs-Region-Id: cn-beijing
Authorization: acs access_key_id:/ZmVlMDNkNDA1ZTQyMWViYWY1MTRhZG
VjODgxMDM4YzRiMzEzNTg0ZA==
{"password": "Just$test","instance_type": "ecs.m2.medium","name": "
my-test-cluster-97082734","size": 1,"network_mode": "vpc","data_disk_
category": "cloud","data_disk_size": 10,"ecs_image_id": "m-253llee3l"}
```

请求构造过程

计算 `Content-Length` 和 `Content-MD5`

`Content-Length`: body 内容的长度。

 说明：

示例 body 首位没有空格或换行符。

```
body: {"password": "Just$test","instance_type": "ecs.m2.medium","
name": "my-test-cluster-97082734","size": 1,"network_mode": "vpc","
data_disk_category": "cloud","data_disk_size": 10,"ecs_image_id": "m-
253llee3l"}
Content-Length: 210
```

`Content-MD5`: MD5 的计算过程。

```
body: {"password": "Just$test","instance_type": "ecs.m2.medium","
name": "my-test-cluster-97082734","size": 1,"network_mode": "vpc","
data_disk_category": "cloud","data_disk_size": 10,"ecs_image_id": "m-
253llee3l"}
# 计算 body 的 md5 值
md5(body): e94e002cc90a4a3d0f61b790487aa098
# 将 md5 值转化成字节数组。将 md5 中的每两个十六进制位合并，转化为一个字节。
# 例如：e9 -> 11111111111111111111111111101001 -> -23
bytes(md5(body)): {[-23], [78], [0], [44], [-55], [10], [74], [61], [
15], [97], [-73], [-112], [72], [122], [-96], [-104]}
# 将得到的字节数组做一个 base64 转换
base64(bytes(md5(body))): 6U4ALMkKSj0PYbeQSHqgmA==
Content-MD5: 6U4ALMkKSj0PYbeQSHqgmA==
```

处理 `CanonicalizedHeaders`

```
# 将所有以‘x-acs-’开头的头部列出来
x-acs-version: 2015-12-15
x-acs-signature-nonce: ca480402-7689-43ba-acc4-4d2013d9d8d4
x-acs-signature-version: 1.0
x-acs-signature-method: HMAC-SHA1
X-Acs-Region-Id: cn-beijing
# 将请求名字变成小写，去掉每一行首尾的空格，并按照字典序进行排序。删除请求头和内容之
间分隔符两端出现的任何空格。
# 注意：最后一行没有换行符。
x-acs-region-id:cn-beijing
x-acs-signature-method:HMAC-SHA1
x-acs-signature-nonce:fbf6909a-93a5-45d3-8b1c-3e03a7916799
x-acs-signature-version:1.0
x-acs-version:2015-12-15
```

计算 `CanonicalizedResource`

示例得到的 `CanonicalizedResource`，长度应该为 27。

 说明：

第一行行尾有一个 \n 的换行符。

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

计算 Signature

组装 SignatureString。示例中的加签字符串的长度为 307。除最后一行外，每一行行尾均有一个\n的换行符。

```
POST
application/json
6U4ALMkKSj0PYbeQSHqgmA==
application/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-3e03a7916799
x-acs-signature-version:1.0
x-acs-version:2015-12-15
/clusters?param1=value1&param2=value2
```

计算 Signature

```
# 使用 accessKeySecret 来对加签字符串进行加密，其中示例使用的 accessKeySecret
 是 access_key_secret。
hmac-sha1(SignatureString): fee03d405e421ebaf514adec881038c4b313584d
# 类似于 Content-MD5 的计算方式，将得到的加密串转化成字节数组。
# 将得到的字符数组做一个 base64 转换。得到最后的签名串。
base64(bytes(hmac-sha1(SignatureString))): ZmVlMDNkNDA1ZTQyMWVi
YWY1MTRhZGVjODgxMDM4YzRiMzEzNTg0ZA==
Signature: ZmVlMDNkNDA1ZTQyMWViYWY1MTRhZGVjODgxMDM4YzRiMzEzNTg0ZA==
```

完成

经过以上的处理，添加一些其他头部信息，最终构成的 HTTP 请求如下所示。

```
POST http://cs.aliyuncs.com/clusters?param1=value1&param2=value2 HTTP/
1.1
Accept-Encoding: identity
Content-Length: 210
Content-MD5: 6U4ALMkKSj0PYbeQSHqgmA==
x-acs-version: 2015-12-15
Accept: application/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-3e03a7916799
x-acs-signature-version: 1.0
Date: Wed, 16 Dec 2015 12:20:18 GMT
x-acs-signature-method: HMAC-SHA1
Content-Type: application/json;charset=utf-8
X-Acs-Region-Id: cn-beijing
Authorization: acs access_key_id:/ZmVlMDNkNDA1ZTQyMWViYWY1MTRhZG
VjODgxMDM4YzRiMzEzNTg0ZA==
```

```
{"password": "Just$test","instance_type": "ecs.m2.medium","name": "
my-test-cluster-97082734","size": 1,"network_mode": "vpc","data_disk_
category": "cloud","data_disk_size": 10,"ecs_image_id": "m-253llee3l"}
```

1.2 集群 API 列表

1.2.1 Obtain cluster certificate

Download the certificate used by the current logon user to access the cluster.

Request information

Request line (RequestLine)

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

Special request header

None. See *#unique_6/unique_6_Connect_42_section_mr5_lf1_wdb*.

Return information

Response line (ResponseLine)

```
HTTP/1.1 200 OK
```

Special response header (ResponseHead)

None. See *#unique_6/unique_6_Connect_42_section_zr5_lf1_wdb*.

Response body (ResponseBody)

```
{
    "ca": "string",
    "cert": "string",
    "key": "string"
}
```

Response body explanation

Name	Type	Description
ca	string	The Certification Authority (CA) which issues the certificate for the current logon user to access the cluster.
cert	string	The certificate used by the current logon user to access the cluster.

Name	Type	Description
key	string	The private key used by the current logon user to access the cluster.

Examples

Request example

```
GET /clusters/C5b5e80b0b64a4bf6939d2d8fbbc5ded7/certs HTTP/1.1
<Public request header>
```

Response example

```
HTTP/1.1 200 OK
<Public response header>
{
    "ca": "xxxxxxxx",
    "cert": "xxxxxxxx",
    "key": "xxxxxxxxxx"
}
```

1.2.2 Obtain cluster kubeconfig interface

Return the Kubernetes cluster access kubeconfig that contains the identity information of the current logon user.

Request information

Request line (RequestLine)

```
GET /k8s/:clusterid/user_config
```

Special request header (RequestHead)

None. See *#unique_17/unique_17_Connect_42_section_mr5_lf1_wdb*.

Response information

Response line (ResponseLine)

```
HTTP/1.1 200 OK
```

Special response header (ResponseHead)

None. See *#unique_17/unique_17_Connect_42_section_zr5_lf1_wdb*.

Response body (ResponseBody)

```
    "config": "string"
```

Response body explanation

Name	Type	Description
`config`	string	The cluster access kubeconfig of the current logon user.

Example

Request example

```
GET /k8s/c5b5e80b0b64a4bf6939d2d8fbbc5ded7/user_config HTTP/1.1
<Public request headers>
```

Response example

```
HTTP/1.1 200 Ok
<Public response headers>

     "config": "xxxxxxxx"
```

1.2.3 Add existing ECS instances to a cluster

Add existing Elastic Compute Service (ECS) instances to a cluster.

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

Request information

Request line (RequestLine)

```
POST /clusters/{cluster_id}/attach 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 *#unique_17/unique_17_Connect_42_section_mr5_lf1_wdb*.

Request body (RequestBody)

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

Request body explanation

Name	Type	Required	Description
password	string	Yes	The password of the ECS instance, which is 8–30 characters long and must contain uppercase letters/ lowercase letters, numbers, and special characters at the same time.
instances	array	Yes	The array of existing ECS instances.

Response information

Response line (ResponseLine)

```
HTTP/1.1 202 OK
```

Special response header (ResponseHead)

None. See *#unique_17/unique_17_Connect_42_section_zr5_lf1_wdb*.

Response body (ResponseBody)

```
    "list": [

            "code": "200",
            "instanceId": "i-2zee3oiwcyoz7kwdo8bt",
            "message": "successful"


            "code": "200",
            "instanceId": "i-2ze0lgm3y6iylcbtcypf",
            "message": "successful"
```

```
    "task_id": "T-5a544aff80282e39ea000039"
```

Example

Request example

```
POST /clusters/Cccfd68c474454665ace07efce924f75f/attach HTTP/1.1
<Public request headers>

    "password": "Hello1234",
    "instances": [
        "i-xxxx",
        "i-yyyy"
```

Response example

```
HTTP/1.1 202 Accepted
<Public response headers>

    "list": [

            "code": "200",
            "instanceId": "i-xxxx",
            "message": "successful"


            "code": "200",
            "instanceId": "i-yyyy",
            "message": "successful"


    "task_id": "T-5a544aff80282e39ea000039"
```

1.2.4 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 *#unique_6/unique_6_Connect_42_section_mr5_lf1_wdb*.

Request body requestbody

None.

Return information

Response line (ResponseLine)

```
HTTP/1.1 200 OK
```

Special response header (ResponseHead)

None. See *#unique_6/unique_6_Connect_42_section_zr5_lf1_wdb*.

Response body (ResponseBody)

```
{
    "agent_version": "string",
    "cluster_id": "string",
    "created": "datetime",
    "external_loadbalancer_id": "string",
    "master_url": "string",
    "name": "string",
    "network_mode": "string",
    "region_id": "string",
    "security_group_id": "string",
    "size": "numbers",
    "state": "string",
    "updated": "datetime",
    "vpc_id": "string",
    "vswitch_id": "string"
}
```

Response body explanation

Cluster format

Name	Type	Description
agent_version	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_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

Name	Type	Description
		information, see *SSH## Kubernetes##*.
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/C5b5e80b0b64a4bf6939d2d8fbbc5ded7 HTTP/1.1
<Public request header>
```

Response example

```
HTTP/1.1 200 Ok
<Public response header>
{
    "agent_version": "0.5-e56dab3",
    "cluster_id": "c978ca3eaacd3409a9437db07598f1f69",
    "created": "2015-12-11T03:52:40Z",
    "external_loadbalancer_id": "1518f2b7e4c-cn-beijing-btc-a01",
    "master_url": "https://182.92.245.56:17589",
    "name": "my-python-cluster-039de960",
    "network_mode": "vpc",
    "region_id": "cn-beijing",
    "security_group_id": "sg-25yqjuxhz",
    "size": 5,
    "state": "running",
    "updated": "2015-12-15T15:01:58Z",
    "vpc_id": "",
    "vswitch_id": ""
```

```
}
```

1.2.5 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 *#unique_6/unique_6_Connect_42_section_mr5_lf1_wdb* .

Request body (RequestBody)

```
{
    "disable_rollback": "whether or not to roll back if the cluster
fails to be scaled out or in",
    "timeout_mins": "timeout for creating the cluster",
    "worker_instance_type": "instance type of worker nodes",
    "login_password": "password used to log on to the node by using
SSH",
    "num_of_nodes": "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

Name	Type	Required	Description
			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*.
`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 *#unique_6/unique_6_Connect_42_section_mr5_lf1_wdb*.

Response body (ResponseBody)

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

```
}
```

Examples

Request example

```
PUT /clusters/Cccfd68c474454665ace07efce924f75f HTTP/1.1
<Public request header>
{
    "disable_rollback": true,
    "timeout_mins": 60,
    "worker_instance_type": "ecs.sn1ne.large",
    "login_password": "Hello1234"
}
```

Response example

```
HTTP/1.1 202 Accepted
<Public response header>
{
    "cluster_id": "Cccfd68c474454665ace07efce924f75f",
    "request_id": "687C5BAA-D103-4993-884B-C35E4314A1E1",
    "task_id": "T-5a54309c80282e39ea00002f"
}
```

1.2.6 Delete a cluster

Delete a cluster according to the cluster ID, and release all node resources of the cluster.

Request information

Request line (RequestLine)

```
DELETE /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 *#unique_17/unique_17_Connect_42_section_mr5_lf1_wdb*.

Request body (RequestBody)

None.

Response information

Response line (ResponseLine)

```
HTTP/1.1 202 Accepted
```

Special response header (ResponseHead)

None. See *#unique_17/unique_17_Connect_42_section_zr5_lf1_wdb*.

Response body (ResponseBody)

None.

Example

Request example

```
DELETE /clusters/Cccfd68c474454665ace07efce924f75f HTTP/1.1
<Public request headers>
```

Response example

```
HTTP/1.1 202 Accepted
<Public response headers>
```

1.2.7 Create a Kubernetes cluster

Create a Kubernetes cluster with a specified number of new nodes.

Request information

Request Line requestline

```
POST /clusters HTTP/1.1
```

Special request header requesthead

None. See *#unique_17/unique_17_Connect_42_section_mr5_lf1_wdb*.

Request body (RequestBody)

```
{
    "disable_rollback": "whether or not to roll back if the cluster
fails to be created",
    "Name": "cluster name ",
    "Maid": cluster creation timeout,
    "cluster_type": "cluster type, Kubernetes",
    "region_id": "region",
    "vpcid": "Virtual Private Cloud (VPC) ID",
    "zoneid": "zone",
    "vswitchid": "VSwitch ID",
    "container_cidr": "pod Classless Inter-Domain Routing (CIDR)",
```

```
    "service_cidr": "service CIDR",
    "ssh_flags": "whether or not to enable SSH access for Internet",

    "cloud_monitor_flags":"whether or not to install the cloud
monitoring plug-in",
    "login_password": "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_instance_type": "instance type of master nodes",
    "master_system_disk_category": "system disk type of master nodes",
    "master_system_disk_size":"system disk size of master nodes",
    "worker_instance_type": "instance type of worker nodes",
    "worker_system_disk_category": "system disk type of worker nodes",
    "worker_system_disk_size": "system disk size of worker nodes",
    "num_of_nodes": "number of worker nodes",
    "snat_entry": "whether or not to configure the SNATEntry",
}
```

Request body explanation

Name	Parameters	Required	Description
Disable_rollback	bool	No	Whether or not to roll back if the cluster fails to be created. `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	integer	No	The timeout (in minutes) for creating the cluster resource stack. The default value is `60`.

Name	Parameters	Required	Description
Region_id	string	Yes	The ID of the region in which the cluster resides.
zoneid	string	Yes	The zone of the region in which the cluster resides.
vpcid	string	No	The 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 **vpcid** and **vswitchid** must be empty or have a certain value at the same time.
vswitchid	string	No	The 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 select to allow the system to automatically create a VPC, use the CIDR block 172.16.0.0/16 by default.
Service_cidr	string	No	A service segment cannot conflict with a

Name	Parameters	Required	Description
			VPC segment and a container segment. If you select to allow the system to automatically create a VPC, use the 172.19.0.0/20 CIDR block by default.
master_instance_type	string	Yes	The Elastic Compute Service (ECS) instance type code of the master nodes. For more information, see *Instance type families*.
Master_system_disk_category	string	Yes	The system disk type of the master nodes.
master_system_disk_size	integer	No	The system disk size of the master nodes.
worker_instance_type	string	Yes	The Elastic Compute Service (ECS) instance type code of the worker nodes. For more details, see.
Worker_system_disk_category	string	Yes	The system disk type of the worker nodes.
Worker_system_disk_size	integer	No	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. Use either this parameter or the **key_pair**.
key_pair	string	Yes	The key pair name. Use either this

Name	Parameters	Required	Description
			parameter or **login_password**.
num_of_nodes	integer	No	The number of worker nodes. The value range is [0,300].
snat_entry	bool	Yes	Whether or not to configure the SNAT for VPC. This parameter must be set to `true` if you select to allow the system to automatically create a VPC. Configure the parameter value according to the outbound capability if you select to use an existing VPC to create the cluster.
ssh_flags	bool	No	Whether or not to enable SSH access for Internet.
cloud_monitor_flags	bool	No	Whether or not to install the cloud monitoring plug-in.

Response information

Returns the row responseline

```
HTTP/1.1 202 accepted
```

Special return head responsehead

None. See *#unique_17/unique_17_Connect_42_section_zr5_lf1_wdb*.

Response body (ResponseBody)

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

```
}
```

Example

Request example

```
POST /clusters HTTP/1.1
<Public request header>
{
    "Maid": True,
    "name": "my-test-Kubernetes-cluster",
    "Maid": 60,
    "cluster_type": "Kubernetes",
    "region_id": "cn-beijing",
    "zoneid": "cn-beijing-f",
    "vpcid": "",
    "vswitchid": "",
    "num_of_nodes": 1,
    "container_cidr": "172.16.0.0/16",
    "service_cidr": "172.19.0.0/20",
    "cloud_monitor_flags": true,
    "master_instance_type": "ecs.sn1ne.large",
    "master_system_disk_category": "cloud_efficiency",
    "master_system_disk_size": 40,
    "worker_instance_type": "ecs.sn1ne.large",
    "worker_system_disk_category": "cloud_efficiency",
    "Maid": 40,
    "snat_entry": true,
    "ssh_flags": true,
    "login_password": "Hello1234"
}
```

Returns an example

```
HTTP/1.1 202 Accepted
<Public response headers>
{
    "cluster_id": "cb95aa626a47740afbf6aa099b650d7ce",
    "request_id": "687C5BAA-D103-4993-884B-C35E4314A1E1",
    "task_id": "T-5a54309c80282e39ea00002f"
}
```

1.2.8 Create a multi-availability Kubernetes cluster

Creates a new high-availability Kubernetes cluster instance across the availability area, and creates a specified number of nodes.

Request information

Request line

```
POST /clusters HTTP/1.1
```

Special request header

None. See *#unique_6/unique_6_Connect_42_section_mr5_lf1_wdb*.

Request body

```
{
    "disable_rollback": "whether or not to roll back if the cluster
fails to be scaled out or in",
    "name": "cluster name",
    "timeout_mins": "timeout for creating the cluster",
    "cluster_type": "Kubernetes",
    "region_id": "region",
    "multi_az": true,
    "vpcid": "VPC ID ",
    "container_cidr": "pod Classless Inter-Domain Routing (CIDR)",

    "service_cidr": "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_instance_type_a": "specification of instance on the master
 node in the first available zone",
    "master_instance_type_b": "specification of instance on the master
 node in the second available zone",
    "master_instance_type_c": "specification of instance on the master
 node in the third available zone",
    "master_system_disk_category": "master node system disk type",
    "master_system_disk_size": "master node system disk size",

    "worker_instance_type_a": "specification of instance on the worker
 node in the first available zone",
    "worker_instance_type_b": "specification of instance on the worker
 node in the second available zone",
    "worker_instance_type_c": "specification of instance on the worker
 node in the third available zone",
    "worker_system_disk_category": "system disk type of worker nodes",
    "worker_system_disk_size": "system disk size of worker nodes",
    "num_of_nodes_a": "number of worker nodes in the first available
zone",
    "num_of_nodes_b": "number of worker nodes in the second available
zone",
    "num_of_nodes_c": "number of worker nodes in the third available
zone",
    "ssh_flags": "whether or not to enable SSH access for Internet",
    "login_password": "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

Name	Type	Required	Description
			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`.
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_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

Name	Type	Required	Description
			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
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

Name	Type	Required	Description
			available zone. For more information, see *Instance type families*.
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].
login_password	string	Yes	SSH login password. The password must be 8-30 characters long and contain three types of characters (uppercase/lowercase

Name	Type	Required	Description
			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 *#unique_6/unique_6_Connect_42_section_zr5_lf1_wdb*.

Response body

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

```
}
```

Examples

Request example

```
POST /clusters HTTP/1.1
<Public request header>
{
    "disable_rollback": true,
    "name": "mulit-az-cluster",
    "timeout_mins": 60,
    "cluster_type": "Kubernetes",
    "region_id": "cn-shanghai",
    "multi_az": true,
    "container_cidr": "10.4.0.0/16",
    "service_cidr": "10.3.0.0/20",
    "vpcid": "vpc-mytestvpc",
    "vswitch_id_a": "vsw-a",
    "vswitch_id_b": "vsw-b",
    "vswitch_id_c": "vsw-c",
    "master_instance_type_a": "ecs.c5.large",
    "master_instance_type_b": "ecs.d1.2xlarge",
    "master_instance_type_c": "ecs.c4.xlarge",
    "master_system_disk_category": "cloud_efficiency",
    "master_system_disk_size": 40,
    "worker_instance_type_a": "ecs.c5.large",
    "worker_instance_type_b": "ecs.d1.2xlarge",
    "worker_instance_type_c": "ecs.c4.xlarge",
    "worker_system_disk_category": "cloud_efficiency",
    "worker_system_disk_size": 40,
    "num_of_nodes_a": 2,
    "num_of_nodes_b": 2,
    "num_of_nodes_c": 2,
    "ssh_flags": true,
    "login_password": "Hello1234",
    "cloud_monitor_flags": true
}
```

Response example

```
HTTP/1.1 202 Accepted
<Public response header>
{
    "cluster_id": "cb95aa626a47740afbf6aa099b650d7ce",
    "request_id": "687C5BAA-D103-4993-884B-C35E4314A1E1",
    "task_id": "T-5a54309c80282e39ea00002f"
}
```