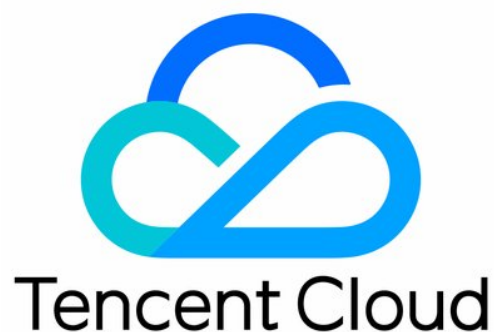


Tencent Cloud Infrastructure as Code

Getting Started

Product Documentation



Copyright Notice

©2013-2024 Tencent Cloud. All rights reserved.

Copyright in this document is exclusively owned by Tencent Cloud. You must not reproduce, modify, copy or distribute in any way, in whole or in part, the contents of this document without Tencent Cloud's the prior written consent.

Trademark Notice



All trademarks associated with Tencent Cloud and its services are owned by Tencent Cloud Computing (Beijing) Company Limited and its affiliated companies. Trademarks of third parties referred to in this document are owned by their respective proprietors.

Service Statement

This document is intended to provide users with general information about Tencent Cloud's products and services only and does not form part of Tencent Cloud's terms and conditions. Tencent Cloud's products or services are subject to change. Specific products and services and the standards applicable to them are exclusively provided for in Tencent Cloud's applicable terms and conditions.

Getting Started

Last updated : 2020-08-13 09:31:37

To quickly familiarize you with Tencent Cloud Infrastructure as Code (TIC), this document describes the basic features of TIC:

- [Authorizing TIC](#): you can authorize TIC to orchestrate cloud resources such as CVM, COS, and MySQL.
- [Creating a Stack](#): you can compile stack code and perform operations such as plan and apply to create cloud resources and build the cloud infrastructure.
- [Querying Cloud Resources](#): you can query cloud resources created using TIC.
- [Destroying Cloud Resources](#): you can release cloud resources to return to the initial status.

Note :

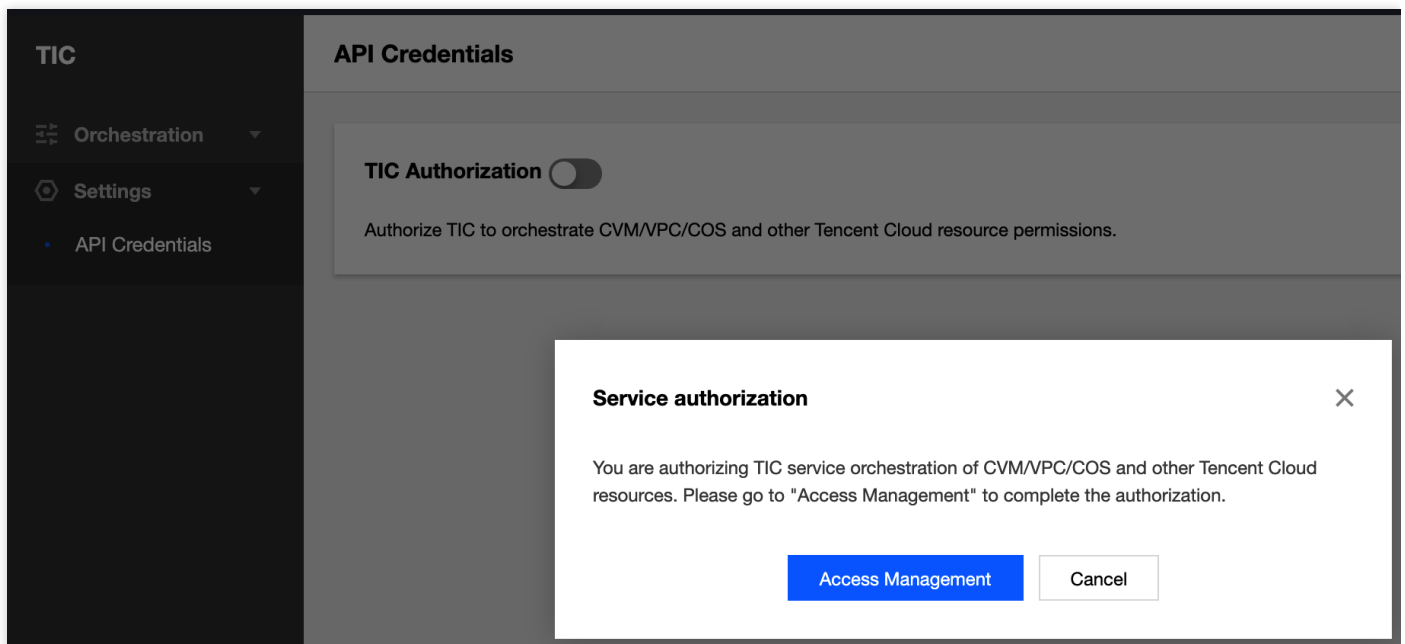
TIC is free of charge and you will only be billed for cloud resources (such as CVM and MySQL) created using TIC. You can modify the configuration file based on business requirements to avoid unexpected costs.

Authorizing TIC

When using TIC for the first time, you must authorize the service to orchestrate cloud resources under your Tencent Cloud account. Otherwise, the operations cannot be performed.

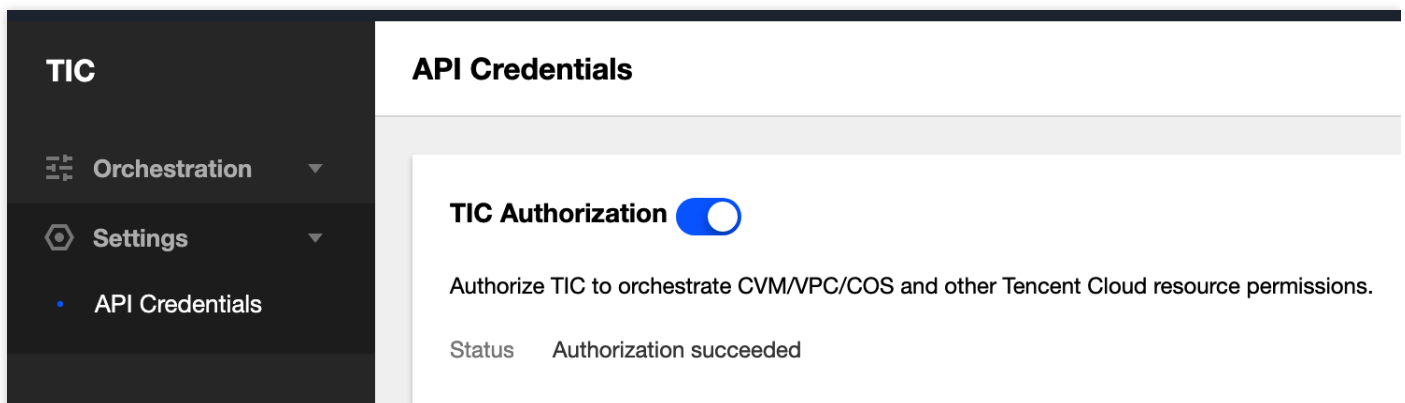
1. Log in to the [TIC console](#).
2. In the left sidebar, choose **Settings** -> **API Credentials** to go to the **API Credentials** page.

3. Click the **TIC Authorization** switch. In the pop-up dialog box, click **Access Management** to go to the CAM page.



4. On the CAM page, click **Grant** to complete the authorization.

5. Go back to the **API Credentials** page. TIC authorization has now been enabled.



Creating a Stack

Step 1: Select Mode

1. In the left sidebar, choose **Orchestration** -> **Stacks** to go to the **Stacks** page.
2. Click **New stack**. On the **New Stack** page, configure parameters as follows:
 - **Provider**: the default value is **Tencent Cloud**. Currently, only **Tencent Cloud** is supported.
 - **Region**: select a region where all resources in the stack will reside. To facilitate testing, select **Chengdu**. You can also select another region for testing.

3. In **Specify Template**, specify how you want to create the stack.

- **URL**: only [Tencent Cloud COS](#) and GitHub are supported. Only one file can be obtained at a time.
- **Private templates**: select a private template. For more information, see [Template Management](#)
- **Public templates**: select a public template. For more information, see [Template Management](#).
- **Enter template content**: enter the infrastructure code. Multi-file compiling is supported.

In this example, **Enter template content** is selected to configure a new stack from scratch.

Stacks / **New Stack**

1 **Select Mode** > 2 **Configure Stack** > 3 **Plan** > 4 **Apply**

Cloud Environment

Provider: Tencent Cloud

Region: ap-chengdu ✓

Specify Template

☐ **URL**
Please enter the URL of the template file with .tf and .zip suffixes. For security reasons, we only supports template files hosted on Tencent Cloud Object Storage (COS) or Github.

☐ **Private templates**
Please select private template which saved in the "Resource Orchestration" "Template Management" page.

☐ **Public templates**
Please select the sample public template built by the system in the "Resource Arrangement" "Template Management" page.

☐ **Import resources**
Import the cloud resources of the Tencent Cloud console into the TIC, and automatically generate configuration templates.

☒ **Enter template content**
Manually enter the configuration content of the template to quickly experience the functional features of the TIC service.

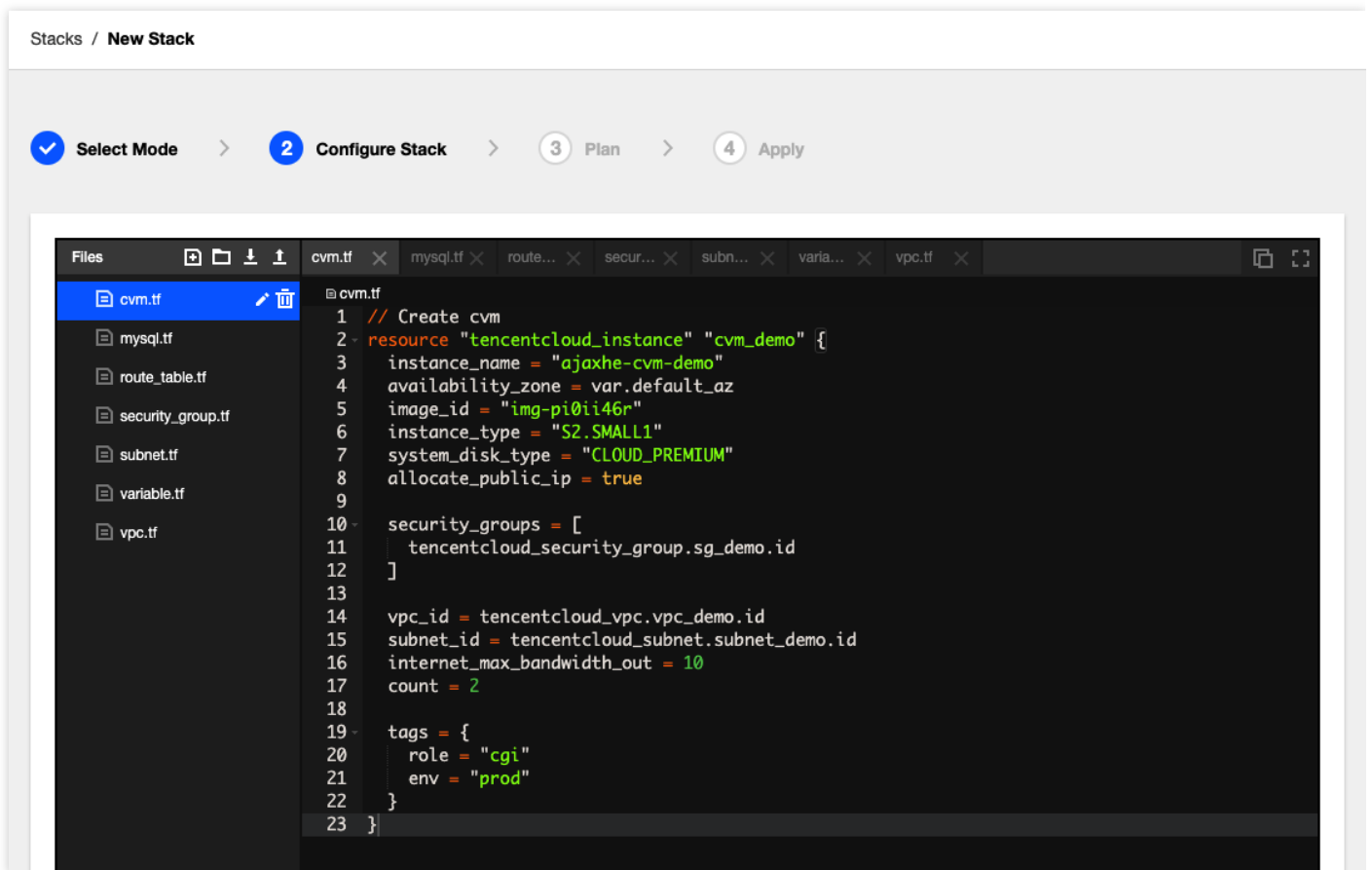
4. Click **Next** to go to Step 2.

Step 2: Configure Stack

TIC parameter configuration is compatible with Terraform's HCL syntax. For more information about HCL syntax, see [Terraform Configuration Language](#).

1. Create resource parameter configuration files. To be consistent with the current network environment, we created two CVMs, one VPC, one subnet, one route table, one security group, and one TencentDB for MySQL instance.

The corresponding configuration files are `cvm.tf`, `vpc.tf`, `subnet.tf`, `route_table.tf`, `security_group.tf`, and `mysql.tf`. The file structure is as follows:



2. For the template to be used universally, we created `variable.tf` that defines two variables: the default region `ap-chengdu` and the default availability zone `ap-chengdu-1`. Note that the region name must be the same as that selected in [Step 1](#).

```
// variable.tf
variable "default_region" {
  type = string
  default = "ap-chengdu"
}

variable "default_az" {
  type = string
  default = "ap-chengdu-1"
}
```

3. The variables defined in `variable.tf` will be referenced by other `.tf` files. The `cvm.tf` file is used as an example to describe the syntax. To obtain the complete content of the `.tf` configuration file, download [tic-](#)

[demo-config.zip](#).

```
// Create cvm
resource "tencentcloud_instance" "cvm_demo" {
  instance_name = "ajaxhe-cvm-demo"
  availability_zone = var.default_az
  image_id = "img-pi0ii46r"
  instance_type = "S2.SMALL1"
  system_disk_type = "CLOUD_PREMIUM"
  allocate_public_ip = true

  security_groups = [
    tencentcloud_security_group.sg_demo.id
  ]

  vpc_id = tencentcloud_vpc.vpc_demo.id
  subnet_id = tencentcloud_subnet.subnet_demo.id
  count = 2

  tags = {
    role = "cgi"
    env = "prod"
  }
}
```

resource "tencentcloud_instance": cloud resources currently created are CVM instances. For more information about cloud resources, see [Resource Types](#).

- `cvm_demo`: local resource name, which is used for cross-cloud referencing.
- `instance_name`: name of the CVM instance.
- `availability_zone`: availability zone of the CVM instance. The `default_az` variable defined in the `variable.tf` file is referenced.
- `image_id`: ID of the CVM image. The value "img-pi0ii46r" indicates Ubuntu Server 18.04.1 LTS (64-bit). You can obtain the image ID from the [Image](#) page in the Tencent Cloud Console.
- `instance_type`: [instance type](#).

system_disk_type: system disk type. `CLOUD_PREMIUM` indicates premium cloud storage. For more information, see the DiskType description in [CreateDisks](#).

- `allocate_public_ip`: whether to configure a public IP address. To configure a public IP address, configure the value to true.
- `security_groups`: list of security groups associated with the CVM instance. The `tencentcloud_security_group.sg_demo.id` indicates that the CVM instance is associated with the security group defined in `security_group.tf`.

- vpc_id: VPC associated with the CVM instance. The `tencentcloud_vpc.vpc_demo.id` indicates that the CVM is associated with the VPC defined in `vpc.tf`.
- count: reserved field. The value 2 indicates two CVM instances with above configurations will be created.
- tags: used to classify CVM instances.

Step 3: Plan

After compiling configuration files, click **Next** to go to the **Plan** step. In this step, TIC verifies the configuration syntax and preprocesses resource change operations.

According to the result of the plan operation as shown in the following figure, 8 cloud resources will be created, and no

resource will be changed or destroyed.

✓ Select Mode

✓ Configure Stack

3 Plan

4 Apply

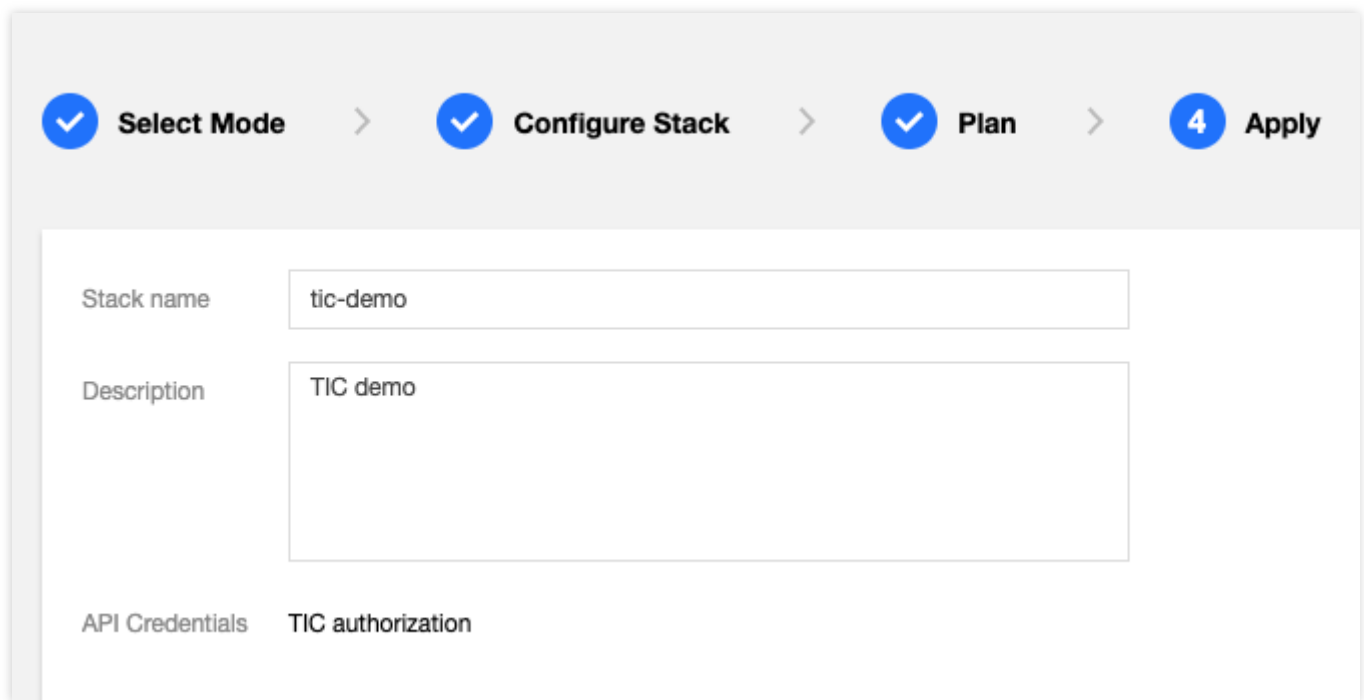
```
[std] + security_group_id = (known after apply)
[std] + source_sg_id    = (known after apply)
[std] + type            = "Ingress"
[std] }
[std] # tencentcloud_subnet.subnet_demo will be created
[std] + resource "tencentcloud_subnet" "subnet_demo" {
[std]   + availability_zone = "ap-chengdu-1"
[std]   + available_ip_count = (known after apply)
[std]   + cidr_block        = "10.0.1.0/24"
[std]   + create_time       = (known after apply)
[std]   + id                = (known after apply)
[std]   + is_default        = (known after apply)
[std]   + is_multicast      = true
[std]   + name              = "ajaxhe-subnet-demo"
[std]   + route_table_id    = (known after apply)
[std]   + tags              = {
[std]     + "env" = "prod"
[std]     + "role" = "cgi"
[std]   }
[std]   + vpc_id           = (known after apply)
[std] }
[std] # tencentcloud_vpc.vpc_demo will be created
[std] + resource "tencentcloud_vpc" "vpc_demo" {
[std]   + cidr_block = "10.0.0.0/16"
[std]   + create_time = (known after apply)
[std]   + dns_servers = (known after apply)
[std]   + id         = (known after apply)
[std]   + is_default = (known after apply)
[std]   + is_multicast = true
[std]   + name       = "ajaxhe-vpc-demo"
[std]   + tags       = {
[std]     + "env" = "prod"
[std]     + "role" = "cgi"
[std]   }
[std] }
[std] Plan: 8 to add, 0 to change, 0 to destroy.
[system] -----planned-----

[system] start analyzing the results of iac engine execution
[system] save the generated state files
[system] save the generated state files finish
[finish]
```

Step 4: Apply

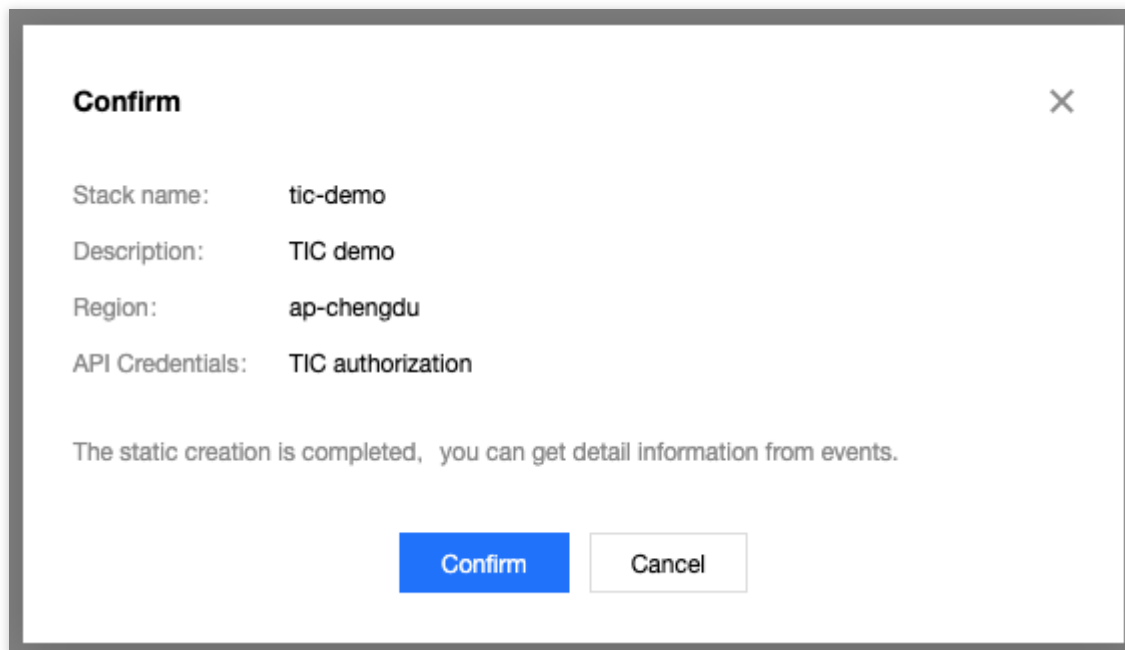
If the result meets your requirements, perform the following operations:

1. Click **Next**, enter the stack name and description, and click **Confirm**.



The screenshot shows the 'Apply' step of a four-step process. The steps are: Select Mode, Configure Stack, Plan, and Apply (the current step, indicated by a blue circle with the number 4). Below the progress bar, there are two input fields: 'Stack name' with the value 'tic-demo' and 'Description' with the value 'TIC demo'. At the bottom, there are two tabs: 'API Credentials' and 'TIC authorization', with 'TIC authorization' being the active tab.

2. In the pop-up confirmation box, click **Confirm**.



The screenshot shows a 'Confirm' pop-up box. It contains the following information: Stack name: tic-demo, Description: TIC demo, Region: ap-chengdu, and API Credentials: TIC authorization. Below this information, it states: 'The static creation is completed, you can get detail information from events.' At the bottom, there are two buttons: 'Confirm' (blue) and 'Cancel' (white).

3. TIC will perform the apply operation to create cloud resources. You will be redirected to the **Stacks** -> **Event** page. The **APPLY_IN_PROGRESS** status indicates cloud resources are being created. The creation process takes

several minutes.

Stacks / **tic-demo**

Property Version Resource **Event**

Filter by key words of version name

Version name	Status	Content	Time ↕	Operation
20200812181945	APPLY_IN_PROGRESS		2020-08-12 18:22:19	Details
20200812181945	PLAN_COMPLETED	Plan: 8 to add, 0 to change, 0 to d...	2020-08-12 18:19:46	Details

Total items: 2

10 / page

1 / 1 page

4. Click the refresh icon in the upper-right corner of the **Event** page. When the status becomes **APPLY_COMPLETED**, cloud resources are created successfully.

Stacks / **tic-demo**

Property Version Resource **Event**

Filter by key words of version name

Version name	Status	Content	Time ↕	Operation
20200812181945	APPLY_COMPLETED	Apply complete! Resources: 8 add...	2020-08-12 18:22:19	Details
20200812181945	PLAN_COMPLETED	Plan: 8 to add, 0 to change, 0 to d...	2020-08-12 18:19:46	Details

Total items: 2

10 / page

1 / 1 page

Viewing Cloud Resources

1. On the **Stacks** page, locate the newly created stack and click on its *ID/Name* to go to the details page.

2. Click the **Resource** tab to view cloud resources managed by TIC.

Stacks / **tic-demo**

Property

Version

Resource

Event

Filter by key words of resource name

Q

↺

Instance ID	Name	Status	Type	Resource name	Operation
ins-3808cm5j	ajaxhe-cvm-demo	Running	tencentcloud_instance	cvm_demo	Details
ins-m6d64mn5	ajaxhe-cvm-demo	Running	tencentcloud_instance	cvm_demo	Details
cdb-86ngiw74	ajaxhe_mysql_demo	Running	tencentcloud_mysql_instance	mysql_demo	Details
rtb-b8c99qqj	ajaxhe-rtb-demo	Running	tencentcloud_route_table	rtb_demo	Details
sg-c7pvzhnr	ajaxhe-sg-demo	Running	tencentcloud_security_group	sg_demo	Details
eyJzZ19pZCI6InNnLWM3c...		Running	tencentcloud_security_grou...	sg_rule_demo	Details
subnet-ojj33zvn	ajaxhe-subnet-demo	Running	tencentcloud_subnet	subnet_demo	Details
vpc-0ynlowba	ajaxhe-vpc-demo	Running	tencentcloud_vpc	vpc_demo	Details

Total items: 8

10 ▾ / page

⏪

⏩

1

/ 1 page

⏪

⏩

3. The **Resource** page only displays key fields of cloud resources. To query resource details, go to the corresponding Tencent Cloud service console. For example, you can log in to the [CVM console](#) to view the two CVM instances created using TIC.

Instances Chengdu(2)

Time-limited special offers Instance Usage Guide

Create Start up Shutdown Restart Reset Password More Actions

Separate keywords with "|"; press Enter to separate filter tags

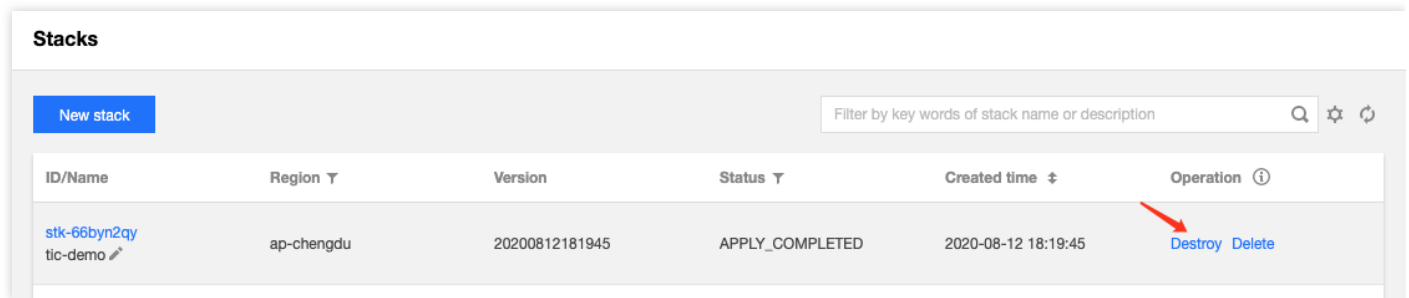
☐ View instances pending repossession

ID/Name	Monitoring	Status	Availability	Instance Type	Instance Configuration	Primary IPv4	Instance Billing	Operation
<input type="checkbox"/> ins-3808cm5j New ajaxhe-cvm-demo		Running	Chengdu Zone 1	Standard S2	1-core 1GB 10Mbps System disk: Premium Cloud Storage Network: ajaxhe-vpc-demo		Pay as you go Created at 2020-08-12 18:22:45	Log In More
<input type="checkbox"/> ins-m6d64mn5 New ajaxhe-cvm-demo		Running	Chengdu Zone 1	Standard S2	1-core 1GB 10Mbps System disk: Premium Cloud Storage Network: ajaxhe-vpc-demo		Pay as you go Created at 2020-08-12 18:22:45	Log In More
Total items: 2				20 / page	1 / 1 page			

Destroying Cloud Resources

TIC is free of charge but you will be billed for cloud resources created using TIC. To avoid costs incurred by idle resources, promptly destroy resources used only for testing purposes.

1. Go to the **Stacks** page, locate the stack to be destroyed and click **Destroy**.



2. Before the stack is destroyed, information about cloud resources to be destroyed is displayed. Once the stack is destroyed, cloud resources in the stack cannot be recovered.



3. Click **Destroy**. In the pop-up confirmation box, click **Confirm**. TIC will then destroy cloud resources. The process is as shown in the following figure:

Stacks / **Destroy-tic-demo**

```
[std] tencentcloud_security_group_rule.sg_rule_demo: Refreshing state...
[id=eyJzZ19pZCI6InNnLWM3cHZ6aG5yIiwicG9saWN5X3R5cGUiOiJpbmdyZXNzIiwieY2Ikcj9pcCI6IjAuMC4wLjAvMCIsInByb3RvY29sIjoIdGNwliwicG9ydF9yYW5nZSI6IjlyLDgwIiwieYWN0aW9uIjoIYV
[std] tencentcloud_vpc.vpc_demo: Refreshing state... [id=vpc-0ynlowba]
[std] tencentcloud_security_group_rule.sg_rule_demo: Destroying...
[id=eyJzZ19pZCI6InNnLWM3cHZ6aG5yIiwicG9saWN5X3R5cGUiOiJpbmdyZXNzIiwieY2Ikcj9pcCI6IjAuMC4wLjAvMCIsInByb3RvY29sIjoIdGNwliwicG9ydF9yYW5nZSI6IjlyLDgwIiwieYWN0aW9uIjoIYV
[std] tencentcloud_instance.cvm_demo[1]: Destroying... [id=ins-m6d64mn5]
[std] tencentcloud_instance.cvm_demo[0]: Destroying... [id=ins-3808cm5]
[std] tencentcloud_mysql_instance.mysql_demo: Destroying... [id=cdb-86nglw74]
[std] tencentcloud_security_group_rule.sg_rule_demo: Destruction complete after 1s
[std] tencentcloud_instance.cvm_demo[1]: Still destroying... [id=ins-m6d64mn5, 10s elapsed]
[std] tencentcloud_instance.cvm_demo[0]: Still destroying... [id=ins-3808cm5, 10s elapsed]
[std] tencentcloud_mysql_instance.mysql_demo: Still destroying... [id=cdb-86nglw74, 10s elapsed]
```

Once the stack is destroyed, resources of the stack can NOT be restored

4. Wait several minutes until all cloud resources are destroyed.

Stacks / **Destroy-tic-demo**

```
[std] tencentcloud_subnet.subnet_demo: Destruction complete after 1s
[std] tencentcloud_route_table.rtb_demo: Destroying... [id=rtb-b8c99qqj]
[std] tencentcloud_route_table.rtb_demo: Destruction complete after 1s
[std] tencentcloud_vpc.vpc_demo: Destroying... [id=vpc-0ynlowba]
[std] tencentcloud_vpc.vpc_demo: Destruction complete after 1s
[std] Destroy complete! Resources: 8 destroyed.
[system] -----destroyed-----



[system] start analyzing the results of iac engine execution
[system] save the generated state files
[system] save the generated state files finish
[finish]
```

Once the stack is destroyed, resources of the stack can NOT be restored

5. Click **Finish** to return to the stack list page. The status of the stack has become **DESTROY_COMPLETED**.



Stacks / **tic-demo**

Property Version Resource **Event**

Filter by key words of version name  

Version name	Status	Content	Time ↕	Operation
20200812181945	DESTROY_COMPLETED	Destroy complete! Resources: 8 d...	2020-08-12 18:30:35	Details
20200812181945	APPLY_COMPLETED	Apply complete! Resources: 8 add...	2020-08-12 18:22:19	Details
20200812181945	PLAN_COMPLETED	Plan: 8 to add, 0 to change, 0 to d...	2020-08-12 18:19:46	Details

Total items: 3

10 ▾ / page   1 / 1 page 