

# **Auto Scaling**

## **Getting Started**

### **Product Documentation**



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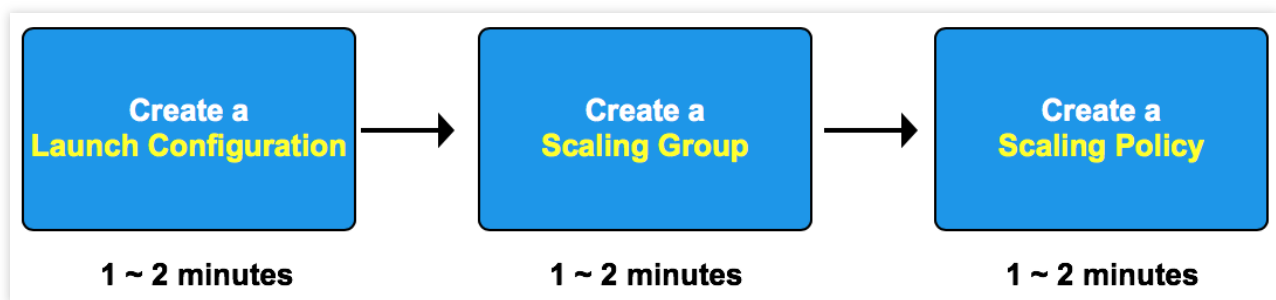
# Getting Started

## Creating a Scaling Plan in 5 Minutes

Last updated : 2024-01-08 17:53:29

### Feature Overview

This document describes how to create a complete AS scheme in three steps.



#### Note:

This document describes how to create a scheme in the AS console. If you prefer to use APIs, follow the instructions in [Introduction](#).

### Directions

Create a complete AS scheme as instructed in the following documents:

[Step 1: Creating a Launch Configuration](#)

[Step 2: Creating a Scaling Group](#)

[Step 3: Creating a Scaling Policy](#)

# Step 1: Creating a Launch Configuration

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## Overview

A launch configuration defines the configuration information of CVM instances used for auto scaling, including their images, storage, networks, security groups, login methods, and other configuration information.

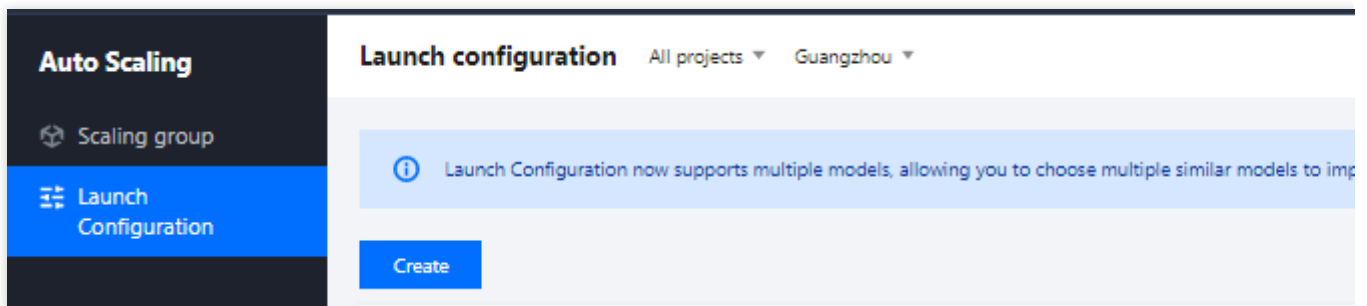
### Note:

Creating a launch configuration is **free of charge**.

## Directions

### Selecting a region

1. Log in to the Auto Scaling console and click **Launch Configuration** in the left sidebar.
2. At the top of the **Launch configuration** page, select the project and region of the launch configuration.



CVM instances and CLB instances must be in the same region as the one specified for launch configuration. For example, if the Guangzhou region is specified for the launch configuration, only CVM instances in Guangzhou will be automatically added to the scaling group. For a scaling group in Guangzhou, you cannot add CVM instances or bind CLB instances from other regions (such as Shanghai, Beijing, Hong Kong (China), or Toronto).

3. Click **Create** to go to the **Create a launch configuration** page.

### Selecting a model

Set up the launch configuration name, availability zone, and model.

The screenshot shows the '1. Select model' step of the Tencent Cloud Auto Scaling console. The interface is divided into three tabs: '1. Select model', '2. Complete configuration', and '3. Confirm configuration'. The '1. Select model' tab is active.

**Launch configuration name:** A text input field with a placeholder 'You can enter 60 characters'.

**Billing mode:** Three buttons: 'Pay as you go' (selected), 'Spot instances', and 'Detailed comparison'.

**Region:** A button labeled 'Guangzhou'.

**Availability zone:** A row of buttons: 'All AZs', 'Guangzhou Zone 2', 'Guangzhou Zone 3', 'Guangzhou Zone 4', 'Guangzhou Zone 5', and 'Guangzhou Zone 6' (selected). Below this row is a button labeled 'Guangzhou Zone 7 Promo'.

**Instance:** Two dropdown menus: 'All CPUs' and 'All Mem'. Below these are two rows of buttons for instance types. The first row includes 'All models', 'Standard' (selected), 'High IO', 'MEM-optimized', 'Compute', 'GPU-based', 'Big Data', and 'Cloud Physics'. The second row includes 'All types', 'Standard S6' (selected), 'Standard SA3 NEW', 'Standard S5', 'Standard SA2', 'Standard S4', 'Standard S3', and 'Standard S1'. Below the second row are buttons for 'Standard Network-optimized SN3ne', 'Standard SA1', 'Standard Network-optimized S2ne', 'Standard S2', and 'Standard Network-optimized S1'.

A note below the availability zone buttons states: 'The information of AZ is not included in the launch configuration. The AZ selected here is only used to list available instance types in the selected AZ.'

**Launch configuration name:** Set the name of the launch configuration.

**Billing mode:** Support [Pay As You Go](#) and [Spot Instance](#).

**Availability zone, model:** Select the model of the instance to be bound with the scaling group.

## Selecting images, storage, and bandwidth

1. When creating a launch configuration, you can use a public image, custom image or shared image. For more information, see [Image Overview](#).

The screenshot shows the 'Image' selection step of the Tencent Cloud Auto Scaling console. The interface includes three tabs: 'Public image' (selected), 'Custom image', and 'Shared image'.

Below the tabs are three dropdown menus: 'TencentOS' (selected), '64-bit' (selected), and 'Please select'.

We recommend that you use a custom image where the application environment has already been deployed for the following reasons:

If you select a **public image**, the CVM instances created in a scaling group will have an operating system without the application environment. Then, you need to manually deploy the application environment.

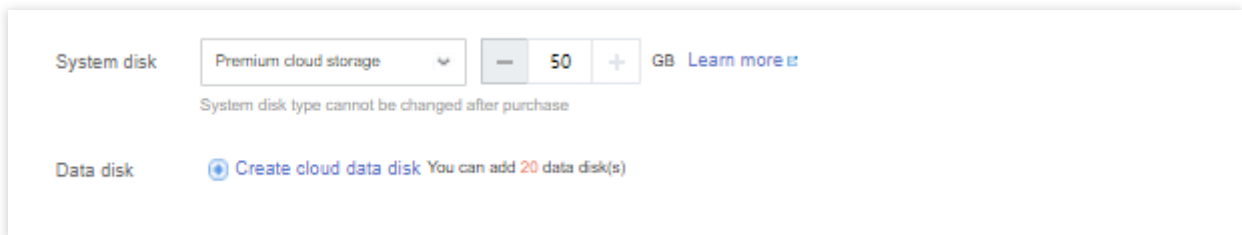
If you select a **custom image**, you can use the image created for a CVM instance with an environment that has been deployed to batch create CVM instances have the same software environment as the original CVM, so as to

implement batch deployment.

**Note:**

For more information about creating images for CVM instance to be bound to a scaling group, see [Creating a Custom Image](#).

2. Set the disks in the launch configuration.



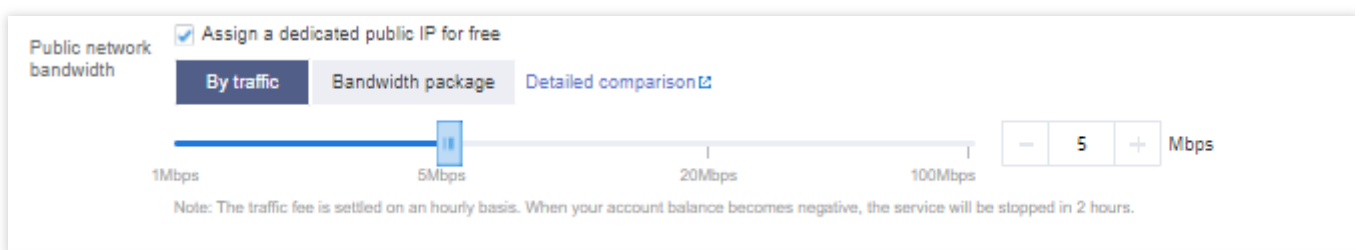
If you specify a cloud disk as the system disk, you can create a data disk using data disk snapshots:

Users with a large amount of data often use data disks to store data. You can create a snapshot for data disk A, and use this snapshot to quickly clone multiple disks for rapid server deployment.

When a new CVM instance is automatically added for Auto Scaling, if you've specified a snapshot for the data disk in the launch configuration, CBS automatically mounts a data disk to the launched CVM instance to copy data.

If a data disk snapshot is specified in the launch configuration, ensure that the data disk can be automatically mounted correctly so that the scaling group can be scaled out automatically. The snapshot of the data disk of the original instance should be taken before auto scaling is configured so that data disks can be automatically mounted when new CVM instances are activated. For more information, see [Attaching Cloud Disks](#).

3. An independent public IP address is allocated by default at no charge. Please select a network billing method based on your actual needs.

**Note:**

Auto Scaling is free of charge, but the added CVM instances, disks, and networks are billed in pay-as-you-go mode. Prices will be shown based on your configurations.

## Setting information

1. In the **Configure the CVM** step, select the login method and security group. By default, CVM instances created by Auto Scaling are protected by Cloud Security and Cloud Monitor free of charge.

1. Select model

2. Complete configuration

3. Confirm configuration

Project

DEFAULT PROJECT

Security groups

New security group

Existing security groups

Operation guide

Select a security group

To open other ports, you can

New security group

Instance name

(Optional) Auto-create an instance name i

Enter a name (up to 40 chars, 40 more allowed). For batch creation, this name will be taken a by a sequence number.

☐ Unique instance name

Login methods

Set password

SSH key pair

Reset password after creation

Username

root

SSH key

Select a key

Operation guide

If no suitable key is found, you can

Create now

Security reinforcement

☒ Enable for free

安装组件免费开通DDoS防护

Details

和主机安全基础版

Details

Cloud monitoring

☒ Enable for free

FREE cloud monitoring, analysis, alarming, and server monitoring metrics (component installation required)

Details

Advanced settings

Hostname

(Optional) Defaults to "Unnamed" if it's left

2-40 characters, including [a-z], [A-Z], [0-9], [-]. Hyphens (-) and dots (.) cannot be used consecutively, and cannot be placed at the beginning or end. A number-on allowed.

☐ Unique hostname

Custom data

(Optional) The custom data is used to configure instances during launching. It supports the Shell format. The original data cannot exceed 16KB. The Shell script must start with "#" or "!" and the path to the interpreter reading the script (usually /bin/bash)

☐ The above input is encoded with base64.

2. After configuration confirmation and successful creation, you can view created launch configurations on the **Launch Configuration** page.



ID/Name	Validity	Bound scaling group	Instance configuration	Instance billing mode	Bandwidth/network billing mode	System disk/Data disk	Image
	Valid	0	ITS.SXLARGE128 (32 core 128GB)	Pay-as-you-go	5 Mbps Bill by traffic	System disk: SSD cloud disks 50GB	

# Step 2: Creating a Scaling Group

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## Overview

A scaling group contains a collection of CVM instances that follow the same rules and have a shared purpose. This document introduces how to create a scaling group in the Auto Scaling console.

## Directions

### Creating a scaling group

1. Log in to the [Auto Scaling console](#) and click **Scaling group** in the left sidebar.
2. On the **Scaling groups** management page, click **Create**.
3. On the **Create scaling group** page that pops up, enter the basic information of the scaling group (fields marked with \* are required).

Create scaling group

1 Basic configuration

2 Load Balancer Configuration

3 Instance Allocation

4 Other configurations

Name \*

Please enter the name

The name can contain up to 55 characters, including Chinese characters, English letters, numbers, underscores, hyphens and periods.

Project

Default project

Min capacity \*

—

0

+

i

Initial capacity \*

—

0

+

i

Max capacity \*

—

1

+

i

Launch configuration \*

Create launch configuration

i

The current launch configuration has only one mode. We recommend configuring multiple similar models to reduce the risk of scale-out failures. [Configure Now](#)

Supported network \*

If you don't have an available network, you can [create a VPC](#).

Support subnet \*

<input type="checkbox"/> Subnet ID	Subnet name	Availability zone
<input type="checkbox"/>		
<input type="checkbox"/>		Zone 2

You can select multiple subnets. CVMs will be created in these subnets randomly when auto-scaling up is triggered, so as to implement cross-subnet disaster recovery. [Suggested settings](#)

Next

**Name:** Set the name of the scaling group.

**Min capacity:** The minimum number of instances allowed in a scaling group.

**Initial capacity:** The number of instances when the scaling group is created.

**Max capacity:** The maximum number of instances allowed in a scaling group.

**Note:**

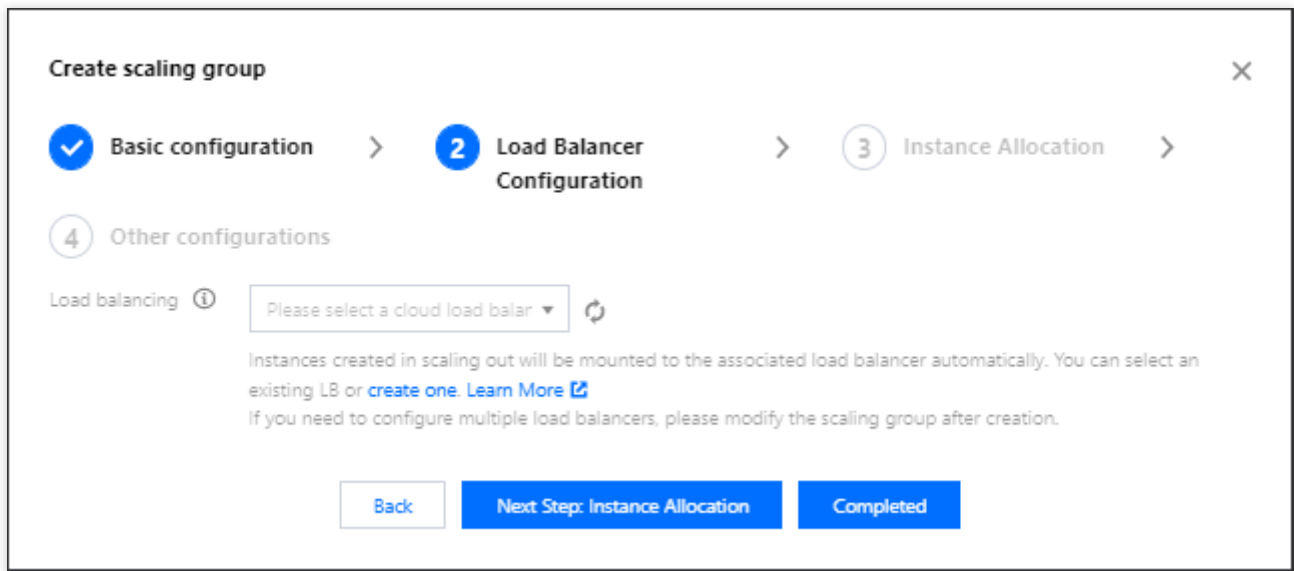
The current number of CVM instances in the scaling group will be maintained between the minimum and the maximum scaling group capacities.

**Launch configuration:** Specifies the launch configuration to scale out CVM instances.

**Supported networks and availability zones:** Select networks and availability zones based on your needs.

4. Click **Next**.

5. (Optional) In the **Load balancer configuration**, associate an existing load balancing policy or create a CLB, and click **Next step: Instance allocation**.



The screenshot shows the 'Create scaling group' wizard with four steps: 1. Basic configuration (checked), 2. Load Balancer Configuration (active), 3. Instance Allocation, and 4. Other configurations. In the 'Load balancing' section, there is a dropdown menu with the text 'Please select a cloud load balancer' and a refresh icon. Below the dropdown, there is a note: 'Instances created in scaling out will be mounted to the associated load balancer automatically. You can select an existing LB or [create one](#). [Learn More](#)'. At the bottom, there are three buttons: 'Back', 'Next Step: Instance Allocation', and 'Completed'.

6. (Optional) In **Instance allocation**, configure the spot instance allocation policy. You can also click **Next step: Instance allocation** to skip this step.

**Note:**

Only when you specify that the billing mode of the launch configuration is pay-as-you-go, you can create a scaling group with both pay-as-you-go and spot instances.

Enable **Spot instance allocation**.

**Create scaling group**

✓ Basic configuration > ✓ Load Balancer Configuration > **3 Instance Allocation** > 4 Other configurations

Spot Instance Allocation ☒

Pay-as-you-go Base Capacity  ⓘ

Pay-as-you-go Above Base  % ⓘ

Spot instance creation policy  ⓘ

Capacity rebalancing  ⓘ

Spot Fallback to Pay-as-you-go  ⓘ

**Pay-as-you-go base capacity:** The minimum number of required pay-as-you-go instances in a scaling group. These instances have higher priority in auto scaling.

**Pay-as-you-go above base:** Controls the percentage of pay-as-you-go instances for the additional capacity beyond the base capacity. Valid range: 0-100

**Spot instance creation policy:** The policies for spot instance creation in a multiple-model lunch configuration.

**Capacity optimized:** First selects the most available spot instance model to make the best use of spot instance resources.

**Lowest price:** First launches spot instances at the lowest core price among the specified availability zones to minimize costs.

**Capacity rebalancing:** Enable it to replace a spot instance before it's terminated, thus maintaining the capacity and pay-as-you-go percentage of the scaling group.

**Spot fallback to pay-as-you-go:** Enable it to create pay-as-you-go instances when spot instances of the configured models are out of stock.

7. In the “Other configurations” step, refer to the following information to set the removal policy and instance creation policy.

**Removal policy:** When the scaling group wants to reduce the number of instances and has multiple choices, it determines which instances to remove according to the removal policy. The options **Remove the oldest instance** and **Remove the latest instance** are supported.

**Instance creation policy:**

**Preferred availability zones (subnets) first:** Based on the sequence of availability zones (subnets) configured, the system first selects configuration items higher in the sequence. If a failure occurs, the system automatically retries in sequence. This mode is suitable for scenarios with one primary availability zone and other secondary availability zones.

**Multiple availability zones (subnets) distribution:** During scale-out, the system will select availability zones (subnets) with relatively few instances in which to create new instances. This mode is suitable for architectures where instances need to be evenly distributed.

8. Click **Completed**. You can view the created scaling groups on the **Scaling groups** page.

ID/Name	Suggestion	Status	Current/Desired	Min/Max Capacity	Load balancing	Launch configuration	Network
test	Normal	Enable	0 / 0	0 / 1	-	5655	
Total items: 1							

## Adding instances (optional)

1. Go to the **Scaling group** page and select the ID of the target scaling group to enter its details page.
2. Select the **Associated to** tab, click **Add instances**.

The screenshot shows the 'Associated to' tab of a scaling group's details page. The left sidebar contains 'Scaling group' and 'Launch Configuration'. The main content area has tabs for 'Scaling group details', 'Associated to', 'Alarm trigger policy', 'Scheduled action', 'Notification', 'Scaling activity', and 'Li'. The 'Associated to' tab is active, showing a table with columns for 'Instance ID/name', 'Monitor status', 'Life cycle', and 'Removal protecti'. The 'Add instances' button is highlighted with a red box, and the 'Remove selected' button is also visible. The table is currently empty, and the status at the bottom indicates 'Total items: 0'.

3. In the **Add instances** window that pops up, select the instance to be bound and click **OK**.

### Note:

If you cannot add or remove a CVM instance to or from the list, check the maximum and minimum capacity values specified for the scaling group.

# Step 3: Creating a Scaling Policy

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## Overview

You can use scaling policies to increase or decrease the number of CVM instances in your scaling group:

Create a **scheduled action** to perform scheduled scaling, which can be set to run periodically.

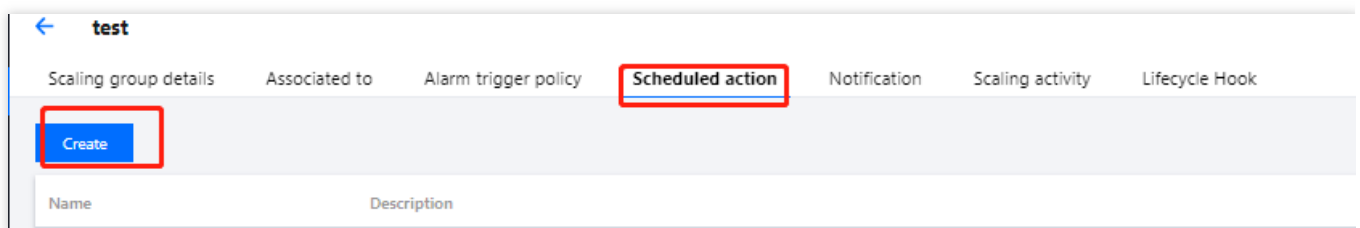
Create an **alarm-triggered policy** to perform scaling based on Cloud Monitor metrics (such as CPU utilization and memory usage).

## Directions

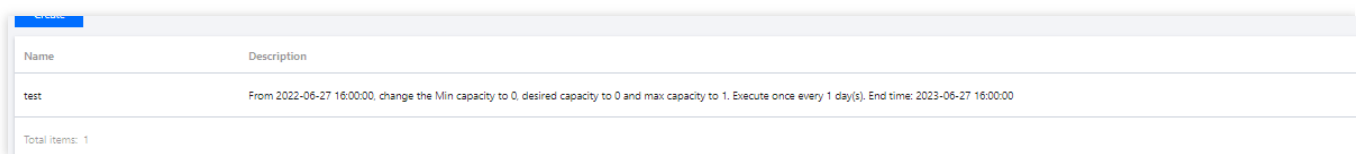
### Creating a scheduled action

If your load changes are predictable, you can set scheduled actions to plan your scaling activities. This feature can automatically increase or decrease CVM instances according to a schedule. This allows you to flexibly cope with traffic load changes and improve device utilization while reducing deployment and instance costs.

1. Go to the [Scaling group](#) page and select the ID of the target scaling group to enter its details page.
2. Select the **Scheduled action** tab, and click **Create**.



3. In the **Create scheduled action** window that pops up, specify the action name, scaling group activities, repeat cycle, and other information.
4. After completing the configuration, click **OK** to view the scheduled action.



### Creating an alarm policy

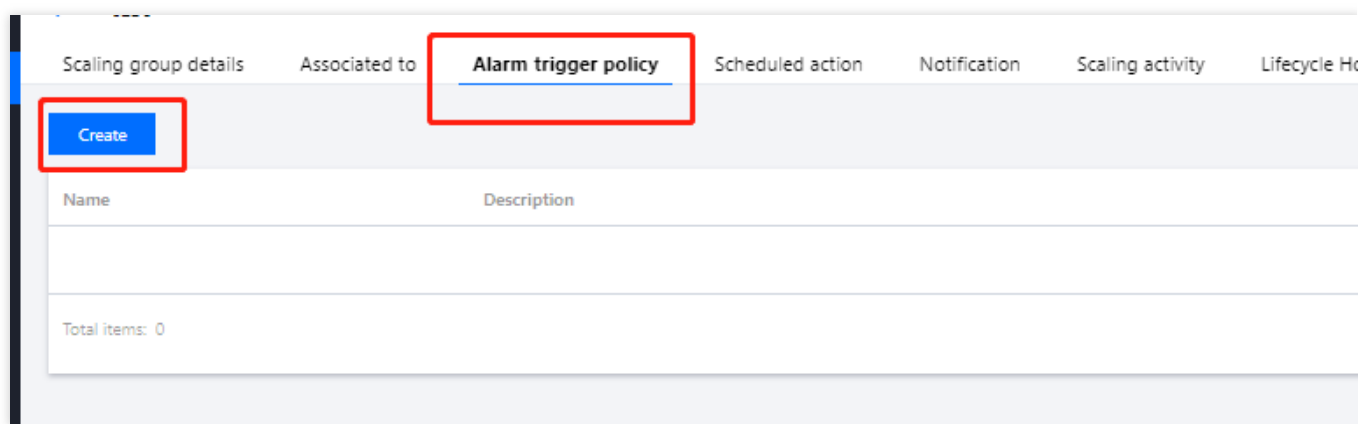
If you want to perform scaling based on CVM metrics, you can create an alarm policy to plan device scaling. This policy helps you automatically increase or decrease the number of instances in your scaling group to flexibly handle business load changes, increase device utilization, and reduce deployment and instance costs.

**Note:**

When a scaling group is created, a ping unreachable alarm-triggered policy is created by default, which is used to replace unhealthy CVMs.

Before using an alarm policy, you need to install the latest version of Cloud Monitor Agent in the CVM image. For more information, see [Installing Monitor Components](#).

1. Go to the **Scaling group** page and select the ID of the target scaling group to enter its details page.
2. Select the **Alarm-triggered policy** tab, and click **Create**.



3. In the **Create alarm policy** window that pops up, configure the Cloud Monitor metrics (such as CPU utilization, memory usage, and bandwidth), which will be used as the basis of adding or removing CVM instances by a specified number or percentage.

You can also choose **Use existing policy (optional)** to copy an existing policy from an existing scaling group to the current scaling group.



### Create alarm policy

Name \*

Supports Chinese characters, English letters, numbers, underscores, hyphen

Use Existing Policy (Optional)

Please select a scaling group

Please select

Copy

if \*

Instances in the scaling group:

CPU utilization

1 minute

Max

>

% Consecutive 1

Detailed Statistics Rules

Scaling group activities \*

Increase

instances

cooldown

second(s)

OK

Cancel

4. After completing the configuration, click **OK** to view the alarm-triggered policy.

Create	
Name	Description
test	When the Max of CPU utilization is larger than 25 % in 1 min(s) for 1 consecutive times, the number of instances increase 20 CVM(s). The cooldown period is 30 seconds.
Total items: 1	