

# **Serverless Cloud Function**

## **Purchase Guide**

### **Product Documentation**



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# Purchase Guide

## Billing Overview

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### Free Quota

Users who have opened SCF service can enjoy certain amount of free resource usage and invocations. There is no free quota for public network outbound traffic. For more details, please see [Free Quota](#).

Billing Item	Monthly Free Quota
Resource Usage	400K GB-s
Number of Invocations	1 Million invocations

### Billing Modes and Items

SCF is billed on an hourly basis in a post-paid mode in USD.

The SCF bill consists of the following three parts and each part is calculated in a specific method based on the collected data. The calculated amount is in USD and rounded to 0.01 :

- Resource usage fee: Memory configured \* running time, in GB-s.
- Fee for number of invocations: Every time the function is triggered and executed, it is counted as one invocation.
- Fee for public network outbound traffic: The traffic generated in accessing external network resources from SCF is counted as outbound traffic in GB.

For more details, please see [Billing Methods](#).

### Product Pricing

For the pricing of the three parts of SCF fee, please see below:

- Resource usage fee: 0.0000167 USD/GB-s
- Fee for number of invocations: 0.002 USD/10k invocations

- Fee for public network outbound traffic: The price per GB varies depending on each region. 0.12 USD/GB in mainland China.

For more details, please see [Product Pricing](#)

## Supported Regions

The table below lists the supported regions of SCF:

Region	Value
South China (Guangzhou)	ap-guangzhou
East China (Shanghai)	ap-shanghai
North China (Beijing)	ap-beijing
Southwest China (Chengdu)	ap-chengdu
Hong Kong/Macao/Taiwan, China region (Hong Kong, China)	ap-hongkong
Southern Asia Pacific (Mumbai)	ap-mumbai
Southeast Asia Pacific (Singapore)	ap-singapore
Northeast Asia Pacific (Tokyo)	ap-tokyo
North America (Toronto)	na-toronto
West US (Silicon Valley)	na-siliconvalley

## Billing Details

For billing details, see the following documents:

Document Name	Document Link
Free Quota	<a href="#">View document</a>
Billing Mode	<a href="#">View document</a>
Product Pricing	<a href="#">View document</a>

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Payment in Arrears	<a href="#">View document</a>
Billing Examples	<a href="#">View document</a>

# Billing Mode

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## Billing Mode

For more information on SCF billing, please see [Billing Mode](#), [Product Pricing](#), and [Notes on Arrears](#).

SCF is pay-per-use service without upfront payment. Fees are calculated per hour in **USD**. An SCF bill consists of the following three parts (each part is billed according to its statistics and calculation method, and the fees are accurate to 2 decimal places in **USD**).

- Resource usage fees
- Invocation volume fees
- Public network outbound traffic fees

For the unit prices of resource usage, invocation volume, and public network outbound traffic, please see [Product Pricing](#). Here, the public network outbound traffic is in GB.

## Billing Principles

SCF fees will be incurred by actual loading and execution of function code. If the function code is not actually executed, no fees will be incurred. Below is an example:

Scenario	Function Execution Status	Calculated	Billed
A request error occurs due to an incorrect parameter, incorrect function name, or non-existent function.	Not executed	No	No
An error occurs due to function execution timeout or function execution memory overrun.	Executed	Yes	Yes
An error occurs due to a function code problem.	Executed	Yes	Yes
A request error occurs due to concurrence overrun.	Not executed	No	No

## Resource Usage Fees

**Resource usage fees = (resource usage - free tier) \* resource usage unit price**

## Resource usage in GB-s

**Resource usage = memory configured for function \* execution duration**

Resource usage is calculated by multiplying the memory configured for function by the billable function execution duration. Here, the configured memory is in GB, and the billable duration is converted from milliseconds to seconds. Therefore, the resource usage is in **GB-s**.

For example, if a function with 256 MB memory configured is executed for 1760 ms, then the billable duration is 1760 ms, and the resource usage of this function execution will be  $(256/1024) * (1760/1000) = 0.44$  GB-s.

Resource usage will be calculated for each function execution and aggregated in each hour as the hourly resource usage.

- Currently, SCF resource usage is calculated by multiplying the memory configured for function by the actually triggered execution duration of function. Compared with the billing method of 100-ms upward aggregation, this billing method calculates lower overall resource usage and incurs fewer fees. For more information, please see [Billing Sample](#).
- Due to issues such as uncertainty of computing resources where SCF runs, specific actions in code, and relevant network communications, the execution duration of the same function code may vary slightly when the code is triggered at different times.

## Invocation volume fees

**Invocation volume fees = (number of function invocations - free tier) \* invocation unit price**

Each function triggering and execution will be calculated as an invocation and aggregated in each hour as the hourly invocation volume. Fees will be charged **per 10,000 invocations**.

## Public Network Outbound Traffic Fees

**Public network outbound traffic fees = public outbound traffic \* traffic unit price**

Outbound traffic will be generated when resources are accessed over the public network in a function, such as uploading a file to an external storage space:



- When the code writes files to the storage space provided on the public network, outbound traffic will be generated by sending files; when the code reads data or files from the storage space provided on the public network, outbound traffic will be generated only by sending requests but not by reading or downloading files.
- If a function is configured with a VPC and writes data to a database in the VPC in its code, no outbound traffic will be generated by data writes.
- For a function that uses an API Gateway trigger, **no function outbound traffic will be generated** by the data returned after the function is executed; the traffic generated by the data returned by API Gateway to the client will be calculated as the outbound traffic of and billed by API Gateway.

## Fees of Other Products

If you use other products such as CMQ, CKafka, API Gateway, and COS when using SCF, fees will be calculated according to the billing rules of the actually used products.

# Free Quota

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SCF users are entitled to a certain free tier of resources and invocations each month as shown below. There is no free tier for public network outbound traffic.

- The free tier in each month cannot be accumulated and will be reset at the beginning of the next month.
- When fees are charged for resource usage and invocations, the free tier will be deducted first, and the excessive part will be charged on a pay-as-you-go basis.

Billable Item	Monthly Free Tier
Resources	400,000 GB-s
Invocations	1 million

The table below lists monthly free running durations for SCFs configured with different memories:

Memory (MB)	Free Duration (Seconds)
64	6,400,000
128	3,200,000
256	1,600,000
512	800,000
1,024	400,000
1,536	266,667
3,072	133,333

# Product Pricing

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SCF billing items are priced as follows:

Billing item	Unit	Price
Resource usage	GBs	0.0000167 USD/GBs
Number of Invocations	10k	0.002 USD/10k invocations
Public network outbound traffic	GB	The price per GB varies depending on each region

The public network outbound traffic has different prices for different regions. For details, see the "Bill-by-traffic" section in [Public Network Billing Methods](#).

# Billing Sample

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## Calculation Method

Currently, SCF resource usage is calculated by multiplying the memory configured for function by the **actually triggered execution duration** of function. Compared with the original billing mode of rounding up to the nearest 100-ms, this billing mode calculates less overall resource usage and fees, helping save your budget.

### Web and API services

For web services or API requests, the actual execution duration of code is usually only 30-50 ms. Billing by actual execution duration can lower the fees by up to 70%.

**Example:** user A uses an API service composed of SCF and API Gateway by configuring a function with 128 MB memory and an average execution duration of 37 ms. In the original billing mode, the billable duration of the function is 100 ms, and if the function is invoked 1 million times per day, a resource usage of 12,500 GB-s would be generated. In contrast, in the billing mode based on the actual execution duration, only 4,625 GB-s will be generated, which is a 63% reduction.

### Message processing

For message filtering, converting, and forwarding in message queue services, the actual execution duration of code is usually only 60-80 ms. Billing by actual execution duration can lower the fees by up to 40%.

**Example:** user B uses CKafka to trigger SCF and deliver filtered and converted messages to CKafka by configuring a function with 256 MB memory and an average execution duration of 67 ms. In the original billing mode, if the function is invoked 5 million times per day, a resource usage of 125,000 GB-s would be generated. In contrast, in the billing mode based on the actual execution duration, only 83,750 GB-s will be generated, which is a 37% reduction.

### Event forwarding

For forwarding COS events to downstream systems, the actual execution duration of code is usually only 50-80 ms. Billing by actual execution duration can lower the fees by up to 50%.

**Example:** user C uses SCF to forward file upload events of COS to their own file processing system by configuring a function with 128 MB memory and an average execution duration of 43 ms. In the original billing mode, if there are 200,000 files uploaded per day, a resource usage of 2,500 GB-s

would be generated. In contrast, in the billing mode based on the actual execution duration, only 1,075 GB-s will be generated, which is a 57% reduction.

## Billing Example

### Web and API services

Suppose a function with 128 MB memory is configured with an API Gateway trigger. It is triggered by 100,000 URL requests per day, and its average execution duration per request is 70 ms.

#### The daily resource usage and number of invocations are as follows:

- Number of invocations per day: 100,000
- Resource usage per day:  $(128 / 1024) * (70 / 1000) * 100000 = 875$  GB-s

#### The monthly fees (for 30 days) are as follows:

- Monthly resource usage fees:  $875 * 30 = 26250$  GB-s, which is less than 400,000 GB-s and does not incur fees
- Monthly invocation fees:  $(100000 * 30 / 10000 - 100) * 0.002 = 0.4$  USD

In this case, the total fees are invocation fees of 0.4 USD.

### Message queue trigger

Suppose a function with 128 MB memory is configured with a CKafka trigger. It is triggered 3 times per second to process messages and then put them in CKafka, and its execution duration per message is 260 ms.

#### The daily resource usage and number of invocations are as follows:

- Resource usage per day:  $(128 / 1024) * (260 / 1000) * 3 * 3600 * 24 = 8424$  GB-s
- Number of invocations per day:  $3 * 3600 * 24 = 259200$

#### The monthly fees (for 30 days) are as follows:

- Monthly resource usage fees:  $8424 * 30 = 252720$  GB-s, which is less than 400,000 GB-s and does not incur fees
- Monthly invocation fees:  $(259200 * 30 / 10000 - 100) * 0.002 = 1.36$  USD

In this case, the total fees are invocation fees of 1.36 USD.

### External file upload

Suppose a function with 256 MB memory is invoked 50 times per second through TencentCloud API. It generates a 1 KB file each time and uploads the file to an external site, and its execution time per generated and uploaded file is 780 ms.

**The daily resource usage and number of invocations are as follows:**

- Resource usage per day:  $(256 / 1024) * (780 / 1000) * 50 * 60 * 24 = 14040$  GB-s
- Number of invocations per day:  $50 * 60 * 24 = 72000$
- Traffic per day:  $1 * 50 * 60 * 24 = 72000$  KB = 70.31 MB

**The monthly fees (for 30 days) are as follows:**

- Monthly resource usage fees:  $(14040 * 30 - 400000) * 0.0000167 = 0.35$  USD
- Monthly invocation fees:  $(72000 * 30 / 10000 - 100) * 0.002 = 0.23$  USD
- Public network outbound traffic fees:  $(70.31 * 30 / 1024) * 0.12 = 0.25$  USD

In this case, the total fees are resource usage fees of 0.35 USD + invocation fees of 0.23 USD + public network outbound traffic fees of 0.25 USD = 0.83 USD

# Notes on Arrears

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## Billing Cycle

SCF is a pay-per-use service without upfront payment. Fees are calculated and deducted per hour according to the usage in the previous hour. At the same time, a bill will be generated for your reference.

If the fees incurred in a billing cycle are less than USD 0.01, no bill will be generated, and no payment amount will be deducted; instead, such fees will be included in the monthly bill for precise adjustment.

## Service Suspension Mechanism

SCF can be used normally within 24 hours after your account falls into arrears. If your account is in arrears for more than 24 hours, your SCF service will be suspended.

The following restrictions will be imposed on all functions after service suspension:

- Existing functions cannot be triggered.
- Timer triggers will stop triggering functions.
- For sync invocations through methods such as TencentCloud API or API Gateway, functions will report errors and fail to execute.

## Service Resumption

When all the overdue payments under your account are paid, the service will be resumed automatically.

- Timer triggers will resume to run.
- Functions can be triggered normally.

# Limits

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SCF has certain quota limits for each user account.

## Quota Limits

The quota limits for a user account are as follows:

Item	Default Quota Limit
Maximum number of functions in each namespace per region	50
Maximum number of concurrent executions per function	300
Maximum number of triggers per function	10
Maximum number of same-type triggers per function	10
Maximum code size of one function (version) (including bound layers)	500 MB
Maximum total code size of functions per region	100 GB
Maximum environment variable size of one function	4 KB

### Note :

- SCF currently supports 10,000-level concurrence, which can effectively support scenarios with high concurrence demand such as ecommerce promotions and parallel processing of medical and biological data.
- For purposes of usage demand and security, the default maximum number of concurrent executions per function is set to 300. To request an increase in quota, please [submit a ticket](#).

The limits for the function runtime environment are as follows:

Item	Quota Limit
Allocated memory	Minimum: 64 MB, maximum: 3,072 MB, in increments of 128 MB starting from 128 MB
Temporary cache space, i.e., size of	512 MB



the <code>/tmp</code> directory	
Timeout period	Minimum: 1 second, maximum: 900 seconds
Number of file descriptors	1,024
Total processes and threads	1,024
Sync request event size	6 MB
Sync request response size	6 MB
Async request event size	128 KB

**Note :**

You can use [API Gateway](#) to pass a Base64-encoded file within 6 MB in SCF. To upload a Base64-encoded file greater than 6 MB, we recommend that you upload it to [COS](#) and give the object address to SCF, therefore SCF will pull the file from COS.

## Increasing Limits

Currently, limits that can be increased include:

- Maximum number of functions
- Maximum number of concurrent executions per function
- Maximum number of triggers per function
- Code size of one function
- Total code size of functions per region

To increase the limits, please [submit a ticket](#) and state the desired items and quantities.