Function Compute

Product Introduction

Product Introduction

What is Function Compute

Alibaba Cloud Function Compute is an event-driven and fully-managed compute service. With Function Compute, you can quickly build any type of applications or services without considering management or O&M. You can complete a set of backend services for processing multimedia data even in several days.

How it works

By using Function Compute, you can author and upload codes without worrying about procuring and managing infrastructure resources. Function Compute prepares computing resources for you and runs your codes on your behalf elastically and reliably.

In addition, Function Compute provides log query, performance monitoring, alarms, and other features.

You only pay for resources actually consumed when running the codes. No fee is incurred for application codes that are not run.

Integration

Function Compute integrates different services in an event-driven manner. When the event source service triggers an event, the associated function is automatically called to process the event.

You can trigger function invocation by using OSS, Log Service, API Gateway, Table Store, or Function Compute SDK and API. With these services and features, you can easily build elastic, reliable, and secure applications. For more information about the type of event sources supported by Function Compute, see Trigger List.

For example, if new data is uploaded to your Alibaba Cloud OSS, a function is automatically called to respond this event. In addition, API gateway can be used to trigger a function for HTTP requests. You can also use the Function Compute SDK and API to call your codes.

Workflow

The following shows the processing procedures of Function Compute:
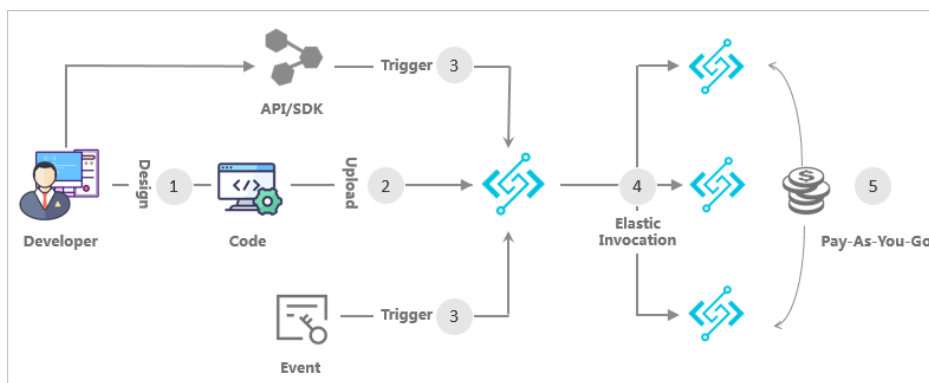
Description

①. The developer compiles applications and services in a particular programming language. For the development languages supported by Function Compute, see Development languages.

②. The developer uploads the application to Function Compute. The uploading paths include Function Compute console, Function Compute API or SDK, or the command -line tool fcli.

③. Trigger calls your function. Trigger methods include OSS trigger, API Gateway, Log Service, Table Store, and Function Compute API / SDK.

④. Resize dynamically and seamlessly Function Compute based on the amount of user requests to guarantee the performance of request peak.

⑤. View the bill that are based on the actual invocation duration of the function. The billing granularity is accurate to 100ms. For more information, see Billing method.

Benefits

Supposing that you plan to develop a short-video clips sharing application, you consider a lot of questions, such as

- How to build, operate, and maintain a flexible and stable video processing backend service?
- How many servers to be purchased?
- What are the server specifications for the App?
- How to configure the network and the operating system?
- How to deploy the environment?
- How to maintain load balance?
- How to dynamically scale?

- How to upgrade the configuration?
- How to manage server downtime?
- How to manage user request peak?
- How to manage system alarms?
......

Benefits

You can use computing resources in the cloud efficiently. You can requisition a server of your exact specifications in a short period of time.

However, most current cloud computing still needs servers and other infrastructure. The management and utilization of these resources is difficult and costly. Alibaba Cloud Function Compute is designed to reduce computing costs and improve efficiency. This computing service enables you to manage your application instead of infrastructure, and provides a serverless model for application design.

With Function Compute, you do not need to manage the bottom-layer infrastructure. You only need to deploy the code to Function Compute and use an event to trigger the function to run the service smoothly. You do not need to be concerned about the deployment environment, server up-scaling, server downtime, or other problems. Function Compute supports elastic up-scaling and Pay-As-You-Go. In addition, Function Compute supports log query, performance monitoring, and alarms to help you quickly locate and troubleshoot problems.

Advantages

Therefore, Function Compute has the following **advantages**:

You do not need to purchase and manage servers or other infrastructure, which lowers the operating costs.

You can write the code you need for the problem at hand with no concern about the entire application or the infrastructure to run it. You can use supported Development languages to design, optimize, test, review, and upload your own application code.

Function Compute service uses an event to trigger an application to respond to user requests. Provides seamless connection to Alibaba Cloud Object Storage OSS, API Gateway, Log Service, Table Store and other services to help you build applications quickly. For example, Function Compute can solve the storage problem of pictures and videos through OSS. When new data is written to your OSS, Function Compute automatically triggers the function to process the new data.

Provides log query, performance monitoring, and alarms for prompt troubleshooting.

Provides elastic scaling within milliseconds for bottom-layer up-scaling to deal with peak pressure.

Supports Pay-As-You-Go and billing to an accuracy of 100 milliseconds. You only pay for the time your code runs. Function Compute is suitable for high traffic-fluctuation scenarios. For more information, see Billing methods.

Service endpoints

Before you use Function Compute service, you must have signed up for Alibaba Cloud. After you sign up for Alibaba Cloud, your account is automatically signed up for Function Compute service.

For each request, the service endpoint and the user account ID must be contained in a formatted pattern: account_id.service_endpoint. For example, assuming that your account ID is 16530750, then you can access Function Compute resources that are in China East 2 (Shanghai) region by using the 16530750.cn-shanghai.fc.aliyuncs.com address.

Internet service endpoint

Function Compute is accessible with the following public endpoints. You are billed for internet usage if your function is transmitting data in and out from the Alibaba Cloud infrastructures from the internet. For more information, see Billing method.

See the following table for the Internet service endpoints.

Region	Service endpoint
China East 1 (Hangzhou)	cn-hangzhou.fc.aliyuncs.com
China East 2 (Shanghai)	cn-shanghai.fc.aliyuncs.com
China North 2 (Beijing)	cn-beijing.fc.aliyuncs.com
China South 1 (Shenzhen)	cn-shenzhen.fc.aliyuncs.com
Hong Kong	cn-hongkong.fc.aliyuncs.com
Asia Pacific NE 1 (Tokyo)	ap-northeast-1.fc.aliyuncs. com
Asia Pacific SE 1 (Singapore)	ap-southeast-1.fc.aliyuncs.com
Asia Pacific SE 2 (Sydney)	ap-southeast-2.fc.aliyuncs.com

Intranet service endpoint

Some Alibaba Cloud services can communicate over intranet, such as Function Compute, ECS, Apsara for RDS, Server Load Balancer, and OSS. We have established a gigabit level of shared bandwidth for those services that are in the same region. If you are transmitting data among Alibaba Cloud services that are in the same region, we recommend you use an intranet connection to avoid the consumption of Internet traffic.

See the following table for the intranet service endpoints.

| Region	Service endpoint
China East 1 (Hangzhou)	cn-hangzhou-internal.fc.aliyuncs.com
China East 2 (Shanghai)	cn-shanghai-internal.fc.aliyuncs.com
China North 2 (Beijing)	cn-beijing-internal.fc.aliyuncs.com
China South 1 (Shenzhen)	cn-shenzhen-internal.fc.aliyuncs.com
Hong Kong	cn-hongkong-internal.fc.aliyuncs.com
Asia Pacific NE 1 (Tokyo)	ap-northeast-1-internal.fc.aliyuncs. com
Asia Pacific SE 1 (Singapore)	ap-southeast-1-internal.fc.aliyuncs.com
Asia Pacific SE 2 (Sydney)	ap-southeast-2-internal.fc.aliyuncs.com

Obtain Alibaba Cloud account ID

Follow these steps to obtain your Alibaba Cloud account ID:

Log on to the **Alibaba Cloud console**.

Click your user avatar from the navigation pane on the right. Choose **Security Settings**.

Find your account ID.
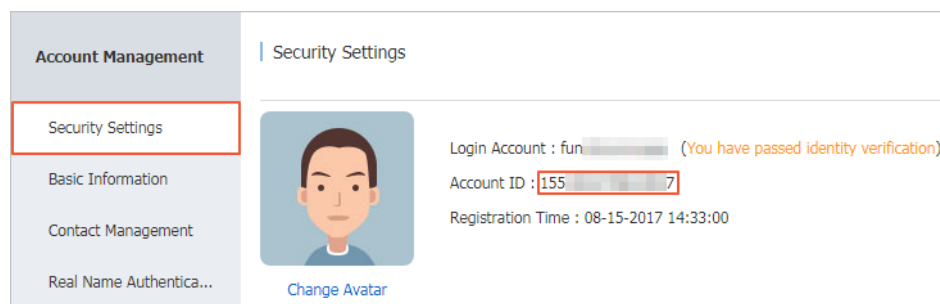
References

- Sign up for Alibaba Cloud
- Regions and zones

Concepts

Service, function, event, and trigger are the basic elements of Function Compute.

Service

A service instance, or service for short, is the basic unit of Function Compute resource, and it organizes a group of functions that are designed for a common task purpose. You can set up access policies, configure log settings, or create functions for a service. All the functions within a service share the same settings. A function belongs to only one service.

When you get started with Function Compute to develop an application, you can set all the functions to a single service at first. However, with the growth of the number of functions and the complexity of your application, we recommend that you consider using the micro-service architecture and split your application into multiple services. For example, supposing that you are developing a blog application, you can split it into services such as UserService, PostService, CommentService, and so on. Each service contains several specific functions that assume a sub-task, which enables each service can be independently developed, tested, and deployed. In particular:

    - UserService manages your user resource and databases to provide creating, reading,
      updating, and deleting operation.
    - PostService manages the post requests and databases to provide creating, reading,
      updating, and deleting operation.
    - CommentService manages the comment requests and databases to provide creating,
      reading, updating, and deleting operation.
      ...

For more information, see Create a service, View a service, and Delete a service.

Function

A function is a basic unit in scheduling and operating a specified task, and itself is a piece of code that is written and uploaded by you. A function runs when it is either invoked directly or triggered by a pre-configured event. The number of functions that can be created in a service is limited. For more information, see Limits.

For more information, see Create a function and Call a function.

Event

An event is an action that triggers the invocation of a function. For example, an HTTP request to call a function or an operation that uploads an object to a specified OSS bucket and triggers a function can be regarded as an event.

Trigger

A trigger determines whether a function is called or not for some events. You can create a trigger to configure, recognize, and monitor a set of events. For example, if you create an OSS PutObject trigger, when an object is put to a specified OSS bucket, a function is invoked to process the pre-defined event.

For more information, see Create a trigger, View a trigger, and Delete a trigger.

Reference

What is OSS

Terms of Service

Thank you for applying for a trial use of Alibaba Cloud Function Compute.

Before applying for a trial use of Alibaba Cloud Function Compute, carefully read the relevant guidelines, rules, and use processes published on www.aliyun.com, as well as all the terms of service on the free trial use of Alibaba Cloud Function Compute. Do not proceed if you do not agree with anything in this service or these terms of service, or cannot accurately understand the interpretations of Alibaba Cloud. By selecting "Free Activation" and proceeding with subsequent operations, you agree to these terms of service, as well as the relevant guidelines, rules, and use processes published on www.aliyun.com. If you have any questions, open tickets in Alibaba Cloud to send us feedback. You may not invalidate or request to cancel these terms of service on grounds of failing to fully read and understand the terms, or failing to receive answers to your questions from Alibaba Cloud, or for whatsoever the reason.

1. These terms of service form a valid contract between yourself and Alibaba Cloud on the basis of your use of Alibaba Cloud Function Compute. By clicking "Free Activation" and proceeding with subsequent operations, you agree to all the provisions hereof.
2. You understand and agree that you use Alibaba Cloud Function Compute at your sole discretion (including but not limited to the compatibility between this service and your software and hardware products, such as the operating system and cloud server), and you are fully liable thereof, including but not limited to: You should carefully read the service description of Alibaba Cloud Function Compute on the Alibaba Cloud website before using

Function Compute, and perform operations with caution in accordance with instructions:

3. You understand and agree that you are responsible for backing up your business data involved in Alibaba Cloud Function Compute.

4. You understand and acknowledge that during your use of Alibaba Cloud Function Compute:

- 4.1. You shall not conduct any behaviors that undermine or attempt to undermine network security (including but not limited to phishing, hacker attacks, network fraud, suspected involvement in the spreading of viruses/trojans/malicious code to websites or cyberspace, and suspected involvement in attack behaviors against other websites and servers by using virtual servers, such as scanning, sniffing, ARP spoofing, and DDoS);

- 4.2. You shall not modify or attempt to modify the system configurations provided by Alibaba Cloud or undermine system and network security;

- 4.3. You shall not modify, translate, edit, lease, sublicense, or transmit/transfer on networks the software or services provided by Alibaba Cloud, or obtain the source code of the software provided by Alibaba Cloud through reverse engineering, decompilation, or other methods;

- 4.4. Alibaba Cloud Function Compute may not be copied, propagated, transferred, licensed or provided for use to any third party without the prior written consent of Alibaba Cloud;

- 4.5. You shall not disseminate email advertisements or spams;

- 4.6. You shall not use Alibaba Cloud Function Compute in any way or for any purpose that violates national or local laws and regulations, industry practices, or public morality, or that affects or damages, or may affect or damage, the interests of Alibaba Cloud or Alibaba Group.

5. Limitation of and Exemption from Liability

- You shall understand and agree to the fact that, though Alibaba Cloud Function Compute provides support of service availability and reliability, Alibaba Cloud will not make a commitment on any service availability and reliability for the duration of free trial, Alibaba Cloud shall not be liable for any work or consequence arising from your use of Alibaba Cloud Function Compute.

6. Changes and Termination

- 6.1. You understand and acknowledge that Alibaba Cloud reserves the right to modify, cancel, or enhance one or more Alibaba Cloud Function Compute functions at its discretion. Notice of any such modification shall be posted on an appropriate page on our website, sent an in-site notification, or by some other means. Alibaba Cloud also has the right to require you to use the latest version for any modified or enhanced Alibaba Cloud Function Compute functions.

- 6.2. If, during your use of Alibaba Cloud Function Compute, you encounter computer viruses, network intrusions and attacks (including but not limited to DDoS), or other events or behaviors (hereinafter referred to collectively as "other behaviors") that may undermine network security, produce an adverse impact on Alibaba Cloud, or affect the communication between Alibaba Cloud and the

Internet, between Alibaba Cloud and specified networks or servers, or Alibaba Cloud's internal communication, Alibaba Cloud reserves the right to suspend or terminate the service without notification. If your use of the service has caused losses to Alibaba Cloud, Alibaba Cloud reserves the right to require you to compensate for such losses.

- 6.3. If the service is terminated based on terms 6.1 and 6.2, Alibaba Cloud has the right to not store your data any more. That is, it will release your created projects and requests, and clear all the data accordingly.

7. Confidentiality

- You and Alibaba Cloud both shall be responsible for the confidentiality of the other party's confidential information, unless the disclosure of such information is required by the national government, courts, or another institution with the relevant authority, or if this information is already in the public domain.

8. Others

- 8.1. You understand and agree that Alibaba Cloud currently provides Alibaba Cloud Function Compute for free (that is, no charges for activation or use). Alibaba Cloud does not rule out the possibility of charges in the future. At such a time, Alibaba Cloud shall publish the charge policy and norms within 10 calendar days by posting an announcement on the appropriate website forum, sending an in-site notification, or by some other means. If you continue to use Alibaba Cloud Function Compute, you shall pay the fees according to the valid charging policy and norms and abide by the valid terms of service published at such time. If you refuse to pay the service fees, Alibaba Cloud has the right to not provide the service to you and to release your business data.

- 8.2. Alibaba Cloud has the right to modify the terms at any time in accordance with changes to relevant laws and regulations, its business conditions and its policy adjustments. The modified terms of service will be posted on www.aliyun.com. If you disagree to the modification, you shall stop using Alibaba Cloud Function Compute. By continuing to use Alibaba Cloud Function Compute, you agree to the modification of the terms of service.

- 8.3. If, for whatsoever reason, any provision of these terms, in full or in part, is found to be invalid, unenforceable, or in violation of any applicable law, the provision is deemed to have been removed, and other provisions of the terms shall remain in full force and effect.

- 8.4. These terms of service shall be governed by the laws of the People's Republic of China. Any dispute arising during the performance of these terms of service shall be promptly settled by both parties through consultation. If no agreement can be reached, either party may file a lawsuit with the People's Court of Hangzhou's West Lake District.