

Cloud Monitor

Product Introduction

Product Documentation



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Product Introduction

Product Overview

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Tencent Cloud's Cloud Monitor (CM) is a service that can monitor Tencent Cloud service resources in real time and generate alarms.

CM provides users with a platform for the centralized monitoring of [CVMs](#), cloud databases, and other Tencent Cloud services. CM displays comprehensive information such as the cloud service resource usage, application performance, and cloud service operation status. It also supports features such as multi-metric monitoring, custom alarms, cross-region and cross-project instance grouping, and custom dashboards for visual monitoring. With these features, CM can help you detect emergencies in running Tencent Cloud services in a timely manner, enhancing system stability, improving OPS efficiency, and reducing OPS costs.

CM collects and obtains monitoring metric data from all dimensions and displays the data in visual charts to help you better understand the health and performance of Tencent Cloud services. Moreover, after you configure alarm rules, CM can instantly notify you of business exceptions through message push, so that you can fully control the usage and health of Tencent Cloud service resources without secondary development. To learn more about CM and obtain relevant monitoring data, go to the [CM console](#), [API Category](#), or [Tencent Cloud CLI](#).

Basic Features

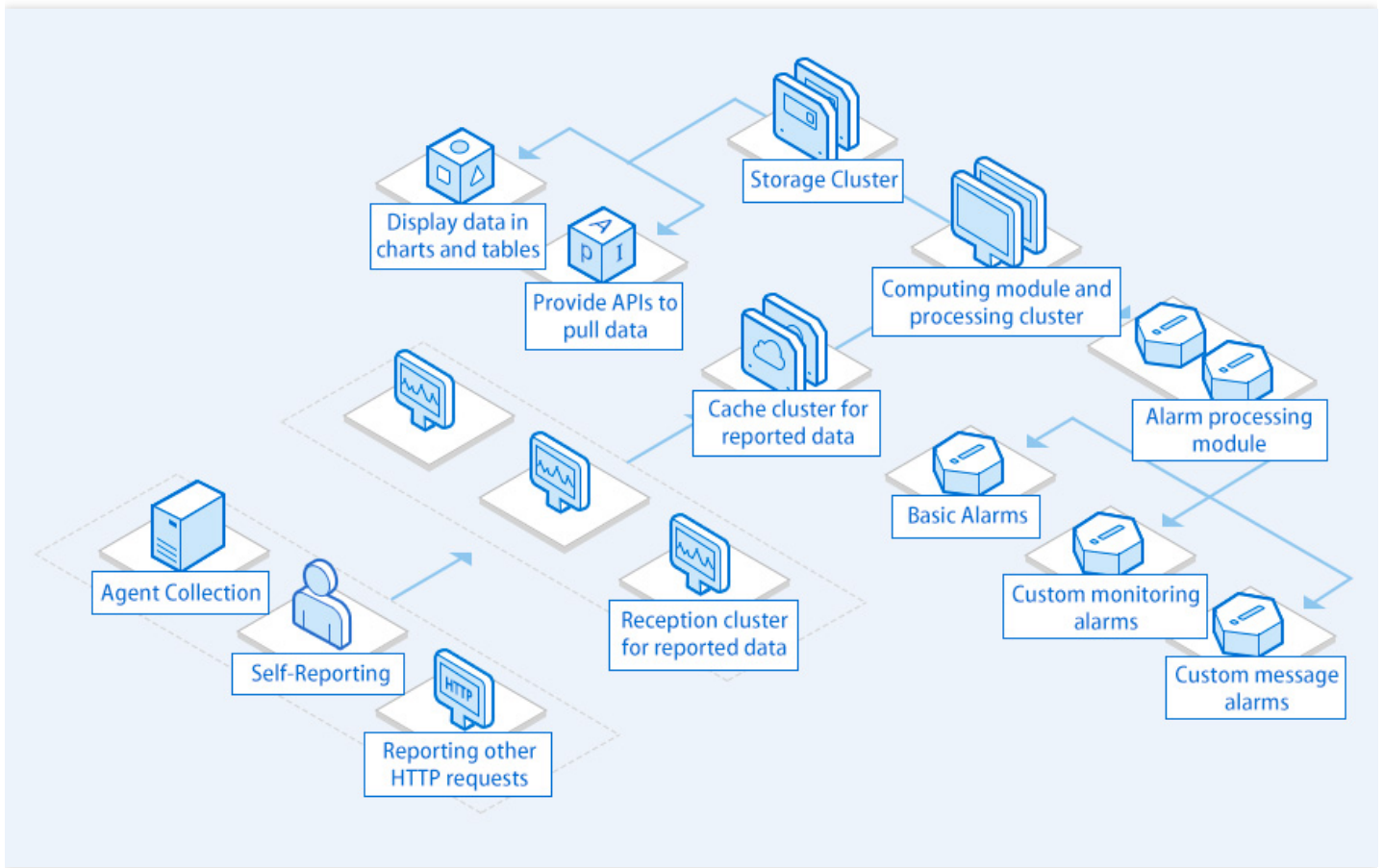
You can access the following features in the Cloud Monitor console:

Component	Capability	Main Feature
Monitoring overview	Displays the overall monitoring information for Tencent Cloud services	Displays the overall information and alarms for Tencent Cloud services at a glance
Dashboard	<ul style="list-style-type: none">Preset monitoring dashboardCustom monitoring dashboard	Provides flexible custom view features applicable to multiple monitoring scenarios, such as cross-instance data aggregation, real-time/historical data display, similar metric comparison, and linked charts
Alarm management	Centralized alarm management	Allows you to configure alarm rules for monitoring metrics, view historical alarms, and receive alarm notifications

Component	Capability	Main Feature
Tencent Cloud service monitoring	Displays the specific monitoring information of Tencent Cloud services	Allows users to view the monitoring details and alarm details of cloud resources under the user's account
Event monitoring	Displays the important event information of Tencent Cloud services and platforms	Provides the reporting, query, and alarm features for event-type data
Traffic monitoring	Displays the traffic information	Displays the traffic usage of the public network outbound bandwidth

Architecture

CM provides basic metrics monitoring and data storage services for users. It is a space for storing the data of all cloud resources. CM collects and obtains the monitoring metric data for Tencent Cloud services through various channels. After processing the data, it stores the data in a repository. You can go to the [CM console](#) to view the monitoring data in charts or pull metric data through APIs. You can also [create alarm policies](#) to define how to handle the monitoring data via the alarm processing system and enable the system to send alarm notifications when the monitoring data triggers the alarm conditions.

Architecture Diagram:

Supported Services

Currently, CM can automatically monitor the following services. Once you start a service, its metric data will automatically be sent to CM.

Note :

Currently, monitoring statistics are collected at granularities of one minute, five minutes, one hour, and one day. Most services, such as Cloud Virtual Machine (CVM) and cloud databases, support the monitoring granularity of one minute, which means that monitoring statistics are collected every minute. Some other products only support a granularity of five minutes, which means that monitoring statistics are collected every five minutes. Monitoring in seconds will be available to certain services. TencentDB for MySQL instances now support free monitoring at the granularity of five seconds. One month before the official billing starts, we will inform you via SMS, the Tencent Cloud Message Center, and email.

- [Cloud Virtual Machine](#)
- [Cloud Block Storage](#)(only when mounted on a running CVM)
- [Cloud Load Balancer](#)
- Cloud databases
 - [TencentDB for MySQL](#)
 - [TencentDB for MongoDB](#)
 - [TencentDB for Redis](#)
 - [Game Database TcaplusDB](#)
 - [Data Subscription](#)
- [Elasticsearch Service](#)
- [Virtual Private Cloud](#)
 - [NAT Gateway](#)
 - [Peering Connection](#)
 - Cross-region connection over the classic network
 - [VPN Gateway](#)
 - [VPN Connections](#)
 - [Direct Connect Gateway](#)
 - [Elastic IP](#)
 - Anycast EIPs
- [Direct Connect](#)
 - Connections
 - Dedicated tunnels
- [Messaging service](#)
 - Topic subscription
 - Queues
- [Cloud Object Storage](#)
- [Cloud File Storage](#)
- [Web Application Firewall](#)

Strengths

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Automatic activation

Cloud Monitor (CM) does not require additional purchase and activation. It will be automatically activated after you [sign up for a Tencent Cloud account](#). After you purchased and used Tencent Cloud services, go to the [Cloud Monitoring console](#) to view the product running status and configure alarms.

Comprehensive metric monitoring

CM allows you to monitor various load and performance metrics, such as CVM CPU utilization, memory utilization, disk utilization, high-speed storage of TencentDB for Memcached, etc. These metrics can be displayed in visual charts. If the basic metric monitoring cannot meet your needs, you can use custom monitoring to report metric data and view monitoring charts in multiple dimensions.

Fine-grained monitoring

Most Tencent Cloud services (including CVM, CDB, VPC, and CBS) are monitored at 1-minute granularity. We are gradually offering seconds-level monitoring for certain services. TencentDB for MySQL now supports monitoring at 5-second granularity.

Elastic alarm configuration

You can configure alarm thresholds for various metrics, and each policy can be associated with different Tencent Cloud services. After you configure a default alarm policy, newly purchased services will be automatically associated with it. You can customize alarm recipients and notification channels.

Flexible alarm service

CM also provides a custom alarm channel service, allowing you to use the monitoring script to generate a custom alarm. The alarm will be reported to the API, which then reports the alarm to CM. CM will push the alarm notification to you.

Basic Features

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After purchasing and using Tencent Cloud services supported by Cloud Monitor (CM), you can log in to the [Cloud Monitoring console](#) to view service running status and metrics, and configure alarm rules for monitoring items.

Tencent Cloud services monitoring

CM offers free monitoring of resources on Tencent Cloud.

- CM can automatically and accurately collect basic monitoring metrics and store monitoring data in real time.
- [Tencent Cloud Product Monitoring](#) and [Dashboard](#) allow you to create custom charts to view metric data and configure [alarms](#). You can also pull metric data through APIs for further use and analysis.

Most monitoring metrics can be collected and displayed automatically, eliminating the need for manual configuration. Some cloud services require you to install and run agent to collect monitoring data, such as CVM and CPM. You can choose automatic installation when purchasing resources for these Tencent Cloud services.

Alarm Services

CM provides prompt and personalized alarm services.

- Based on existing monitoring data, you can configure alarms for cloud resources and custom metrics using default or custom configurations.
- You can configure different alarm policies (such as event alarms, failure alarms, and threshold alarms) for resources in different OPS scenarios.
- You can configure different alarm frequencies and logics to distinguish alarms at various levels. You can configure mobile number, emails, and callback URLs to receive alarms promptly in multiple channels.

Multi-Dimensional Charts

CM allows you to view existing monitoring data in custom charts.

1. You can view the monitoring data of cloud resources in [monitoring views and details](#). The latest data is displayed in the graph by default.
2. On Dashboard, you can subscribe to key metrics, customize metric displays and calculation rules, sort and compare them in lists and charts, troubleshoot and analyze exceptions.
3. You can view the monitoring data and alarm information of all cloud services under your account in the [Cloud Monitoring console](#).

Basic Concepts

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This document describes key terms and concepts for Cloud Monitor.

Metric

Metric is a fundamental concept in Cloud Monitor. A metric represents a time-ordered set of data points sent to Cloud Monitor. You can retrieve the statistics of those data points in time series. A metric can be seen as a variable to monitor, and the data points represent the values of that variable over time. For example, the CPU utilization of a CVM instance is a metric, and the capacity utilization of a TencentDB instance is another metric.

Metric data can come from any product, application, or service. For example, a metric can be the CPU utilization of a CVM instance or the process latency of a user service. The metric is uniquely defined by a name, a namespace, and one or more dimensions. Each data point has a timestamp and an optional unit of measure. When a request is made for metric data stored in Cloud Monitor, the returned data stream will be identified by namespace, metric name, and dimension.

Namespace

A namespace is a container for metrics. Metrics in different namespaces are isolated from each other, so metrics from different applications will not be mistakenly aggregated.

Dimension

A dimension is a key-value pair that uniquely identifies a monitored object. A metric is meaningful only after the dimension value is determined. Dimensions are useful for designing the aggregate structure for statistics. For example, two dimension values of server IP and `proc_name` (process name) can identify monitored object A (IP=1.1.1.1&proc_name=test).

You need to specify the appropriate dimensions when you input the metric data of a Tencent Cloud product into Cloud Monitor (dimensions are preset for metrics preset by the system). An error may occur if an undefined dimension is used for retrieval.

Timestamp

Each metric data point in Cloud Monitor must have a timestamp, which indicates the time when the raw data is collected. The timestamp used in a request must be a `dateTime` object and contain the complete date, hour, minute, and second, such as 2000-01-31 23:59:59. We recommend you provide timestamps based on Beijing time (GMT+8).

Unit

A unit refers to the unit of measure for raw metric data, and an application can derive useful semantic information based on the unit. For example, the unit of CVM's outbound bandwidth is Mbps, because network bandwidth often measures current network speed in Mbps. Common units supported by Cloud Monitor are listed below:

Unit	Description
Second	Time unit
Byte	Data size. 1 byte = 8 bits
bit	The smallest unit of data
%	Percentage
Number of times	Quantity
Bps	Bytes per second
bps	Bits per second

Time granularity

A time granularity refers to a statistical period in Cloud Monitor. Timestamp data represents the result of aggregating all data collected in the specified time granularity. Time granularity is defined in seconds. Cloud Monitor currently supports time granularities of 10 seconds, 60 seconds, and 300 seconds.

When calling a Cloud Monitor API, you can specify the time granularity through the `period` parameter. When the [GetMonitorData](#) API is called to get monitoring data, the values of `period`, `startTime`, and `endTime` parameters determine the amount of data to be returned. For example, calling this API with the default values of all parameters will return the statistics for every 300 seconds in the last hour, i.e., a total of 12 data points.

Time granularities are also important for alarms. When creating an alarm trigger condition, you need to set the time granularity and period for the alarm rule. Different granularities and periods indicate different alarm judgment durations.

Alarm

Alarm management is a feature in Tencent Cloud's monitoring and alarm services. It triggers an alarm if Tencent Cloud resources have an exception, while allowing you to view alarm information, customize alarm thresholds, and subscribe to alarms. Checks will be performed at set intervals according to your custom thresholds. Once an alarm is triggered, you will receive a notification.

Alarm policy type

Alarm policy type identifies the policy category and corresponds to specific Tencent Cloud products. For example, if you choose the CVM policy, you can customize metric alarms for CPU utilization, disk utilization, and more.

Alarm policy

An alarm policy is a set of alarm trigger conditions, and is related to the project and alarm policy type. Up to 15 alarm policies can be created in each alarm policy type for each project.

An alarm policy includes the following components: alarm trigger condition, alarm object, and alarm recipient group. After an alarm policy is successfully configured, alarm notifications will be sent to users through SMS, email, and other channels as configured when an alarm is triggered.

Alarm recipient group

An alarm recipient group can include one or more users. Alarm notifications are sent through "alarm recipient group." For each alarm policy, notifications will be sent to users in the configured alarm recipient group when the alarm threshold is met. You can go to "Account Center" > "Message Subscription" to add user information and alarm receipt methods.

Alarm receipt method

This refers to the way users will be notified when an exception occurs, such as via SMS and email.

Alarm rule

This refers to the action performed when the monitoring data of a metric meets the configured alarm trigger condition.

Alarm trigger condition

An alarm trigger is a semantic condition consisting of metric, comparison relationship, threshold, statistical period, and duration.

Use Cases

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Tencent Cloud services monitoring

After purchasing and using Tencent Cloud services supported by Cloud Monitor (CM), you can go to the corresponding page on [Cloud Monitoring console](#) to view service running status and metrics, and configure alarm rules for monitoring items.

Event monitoring

CM can monitor various Tencent Cloud resources and important event information in the life cycle and operation of the underlying platform infrastructure. You can query event-type data and configure alarms.

Troubleshooting exceptions

According to alarm policies you configured, CM will send you alarms when the monitoring data reaches the alarm threshold. This helps you locate exceptions in real time and query the causes.

Prompt expansion

You can keep track of Tencent Cloud service status after configuring alarm rules for bandwidth, number of connections, disk utilization, and other monitoring items. You will receive alarms when your business volume increases, and can scale out services based on monitoring data.

Use Limits

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Permission Control

- Cloud Monitoring (CM) is available to all users with a Tencent Cloud account.
- CM does not have an independent permission control feature. The root account can be used to view the monitoring and alarm information of all services, and collaborators can view all resource monitoring and alarm information of their corresponding projects.

Storage period of monitoring data

Currently, monitoring data can be stored for a maximum of 6 months. You can query monitoring data from the past 6 months.

Monitoring Granularity	Storage Period
Seconds-level	1 day
One minute or five minutes	31 days
One hour	93 days
One day	186 days

Alarm Limits

- Alarm message quotas
Alarm messages are divided into four types: basic alarms, cloud automated testing alarms, custom messages, and custom monitoring alarms. Each type has a separate quota. Every month, 1,000 free messages of each type are provided to each user. The quota for each type is reset to 1,000 on the first day of each month. If you need additional message quota, please [submit a ticket](#).
- Quantity limit of alarm policy groups
A maximum of 15 alarm policy groups can be created for each user under each project.
A maximum of 15 alarm rules can be created for each policy group.