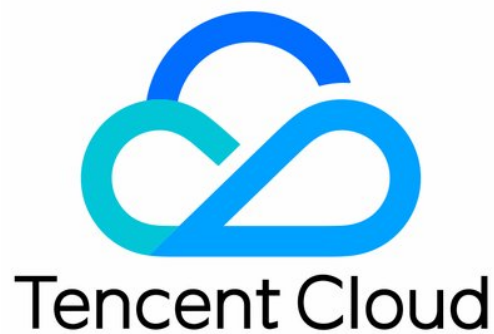


Tencent Kubernetes Engine

Monitoring & Alarms

Product Introduction



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Monitoring & Alarms Overview

Last updated : 2018-07-05 16:00:47

Monitor Alarm Overview

Overview

In order to maintain high reliability, high availability and high performance of Tencent Cloud TKE, it is important to provide a good monitoring environment. Users can collect monitoring data at different dimensions for different resources, to obtain resource usage information and locate errors quickly.

Tencent Cloud's Cloud Monitor provides data collection and presentation features for container clusters, services and pods. With Tencent Cloud's Cloud Monitor, you can view the statistical data of clusters, nodes, services and pods to verify whether the cluster is running normally as well as create relevant alarms. For more information about Cloud Monitor, please see [Cloud Monitor Documentation](#).

Collecting monitoring data allows you to establish normal standards regarding container cluster performance. By testing the performance of a container cluster and collecting historical monitoring data at different times and under different load conditions, users can better understand the normal performance of a running container cluster and service, and quickly determine whether the running service is exceptional based on the current monitoring data, in order to find out solutions in time. For example, users can monitor the CPU utilization, memory utilization and disk I/O of a service.

Monitoring

Cloud Monitor provides monitoring metrics at the following dimensions for TKE:

Cluster Monitoring Metrics

namespace:qce/cvm

Monitoring Item	Monitoring Metric	Unit	Description
Cluster CPU utilization	dc_cpu_usage	%	Average CPU utilization of the nodes in the cluster
Cluster memory utilization	dc_mem_usage	%	Average memory utilization of the nodes in the cluster

For more information about the monitor metrics of CVMs in clusters and how to obtain monitoring data, please see [Monitor CVM](#).

Service Monitoring Metrics

namespace:qce/docker

View: docker_service

Monitoring Item	Monitoring Metric	Unit	Description
Service CPU usage	service_cpu_used	Core	Total CPU used by all container pods in the service
Service CPU utilization (ratio to cluster)	service_cpu_usage_for_cluster	%	The ratio of service CPU utilization to the cluster
Service memory usage	service_mem_used	MiB	Total amount of memory used by all the container pods in the service
Service memory utilization (ratio to cluster)	service_mem_usage_for_cluster	%	The ratio of service memory utilization to cluster
Service network inbound traffic	service_in_flux	MB	Total inbound traffic of all the pods in the service within the time window
Service network outbound traffic	service_out_flux	MB	Total outbound traffic of all the pods in the service within the time window
Service network inbound bandwidth	service_in_bandwidth	Mbps	Total inbound bandwidth of all the pods in the service
Service network outbound bandwidth	service_out_bandwidth	Mbps	Total outbound bandwidth of all the pods in the service
Service network inbound packets	service_in_packets	pps	Total inbound packets of all the pods in the service
Service network outbound packets	service_out_packets	pps	Total outbound packets of all the pods in the service

Pod Monitoring Metrics

namespace:qce/docker

View: docker_pod

Monitoring Item	Monitoring Metric	Unit	Description
Pod network inbound bandwidth	pod_in_bandwidth	Mbps	Containers in the same pod share the same network. This is the inbound network bandwidth of the pod
Pod network outbound bandwidth	pod_out_bandwidth	Mbps	Containers in the same pod share the same network. This is the outbound network bandwidth of the pod
Pod network inbound traffic	pod_in_flux	MB	Containers in the same pod share the same network. This is the inbound network traffic of the pod
Pod network outbound traffic	pod_out_flux	MB	Containers in the same pod share the same network. This is the outbound network traffic of the pod
Pod network inbound packets	pod_in_packets	pps	Containers in the same pod share the same network. This is the inbound network packets of the pod
Pod network outbound packets	pod_out_packets	pps	Containers in the same pod share the same network. This is the outbound network packets of the pod

Container Monitoring Metrics

namespace:qce/docker

View: docker_container

Monitoring Item	Monitoring Metric	Unit	Description
Container CPU usage	container_cpu_used	Core	CPU usage of the container
Container CPU utilization (ratio to CVM)	container_cpu_usage_for_node	%	Ratio of container CPU utilization to CVM
Container CPU utilization (ratio to Request)	container_cpu_usage_for_request	%	Ratio of container CPU utilization to Request

Monitoring Item	Monitoring Metric	Unit	Description
Container CPU utilization (ratio to Limit)	container_cpu_usage_for_limit	%	Ratio of container CPU utilization to Limit
Container memory usage	container_mem_used	MiB	Amount of container memory used
Container memory utilization (ratio to CVM)	container_mem_usage_for_node	%	Ratio of container memory utilization to CVM
Container memory utilization (ratio to Request)	container_mem_usage_for_request	%	Ratio of container memory utilization to Request
Container memory utilization (ratio to Limit)	container_mem_usage_for_limit	%	Ratio of container memory utilization to Limit
Container disk read traffic	container_disk_read_traffic	KB/sec	Disk read traffic when container reads from the disk
Container disk write traffic	container_disk_write_traffic	KB/sec	Disk write traffic when container writes to the disk
Container disk read IOPS	container_disk_read	count	Read IOPS when container reads from the disk
Container disk write IOPS	container_disk_write	count	Write IOPS when container writes to the disk

For more information about monitoring metrics, please see [Cloud Monitor Product Documentation](#).

Alarm

Available soon

Getting Monitoring Data

Last updated : 2018-07-05 16:01:08

Acquiring Monitoring Data

Tencent Cloud Monitor is enabled for all Tencent Cloud users FREE of charge by default.

You can view the monitoring data of TKE in the following ways:

Monitoring on TKE Console

Cluster Monitoring

- Log in to [TKE Console](#), and select **Cluster**.
- Click the "Monitor" icon under the ID of cluster whose monitoring data is to be viewed in the cluster list, to view the cluster monitoring information.

Service Monitoring

- Log in to [TKE Console](#), and select **Service**.
- Click the "Monitor" icon under the name of the service whose monitoring data is to be viewed in the service list, to view the service monitoring information.

Pod Monitoring

- Log in to [TKE Console](#), and select **Service**.
- Click the ID of service whose monitoring data is to be viewed in the service list to enter the Service Details page.
- Click the "Monitor" icon under the name of the pod whose monitoring data is to be viewed in the pod list, to view the pod monitoring information.

Monitoring via API

You can use `GetMonitorData` API to acquire the monitoring data of all products. For more information, please see API [Read Monitor Data](#).

Creating Alarms

Last updated : 2018-05-30 15:08:42

You can create an alarm to warn you of the status change of a cloud product and send related messages. The created alarm determines whether an alarm-related notification needs to be triggered according to the comparison results between a monitored metric and a specific threshold at every interval.

You can take precautionary or remedial measures in a timely manner when an alarm is set off by status changes. Therefore, creating a reasonable alarm can help you improve your application's robustness and reliability. For more information about alarms, please see [Creating Alarms](#).

You can set up an alarm by following steps below.

Creating an Alarm Policy

- 1) Log in to [Tencent Cloud Console](#), click **Cloud Monitoring** -> **My Alarms** tab, and then click **Alarm Policy** menu.
- 2) Click "Add Alarm Policy" button on the alarm policy list page.
- 3) In the pop-up box, enter the policy name, select policy type (the product that the alarm monitors) and choose trigger condition.
 - The trigger condition is a semantic condition consisting of metric, comparison relation, threshold, measurement period and lasting period. For example, if the metric is CPU utilization, the comparison relation is `>`, the threshold is `80%`, the measurement period is `5 minutes` and the lasting period is `2 periods`, it means that the data on CPU utilization is collected every 5 minutes. If the CPU utilization of a CVM is measured as above 80% for twice in succession, an alarm will be triggered.
- 4) With container service, you can create alarm policies for the following objects
 - Container cluster
 - Services within container clusters
 - Containers within container clusters

Associate with an Object

- 1) Log in to [Tencent Cloud Console](#), click **Cloud Monitoring** -> **My Alarms** tab, and then click **Alarm Policy** menu.

2) On the alarm policy list page, click the newly created alarm policy to enter the detail page, click **Add Association** button and select the product you want to monitor, then click **Apply** button.

Setting an Alarm Receiver

1) Log in to [Tencent Cloud Console](#), click **Cloud Monitoring** -> **My Alarms** tab, and then click **Alarm Policy** menu.

2) Click the created alarm policy to enter the detail page, then click **Manage alarm receiving group** button, and check the user groups that need to be notified.

Each alarm policy is a set of trigger conditions with the logical relationship "or", that is, as long as one of the conditions is met, an alarm will be triggered. The alarm will be sent to all users associated with the alarm policy. Upon receiving the alarm, the user can view the alarm and take appropriate actions in time.