

TDMQ for CMQ

Success Stories

Product Documentation



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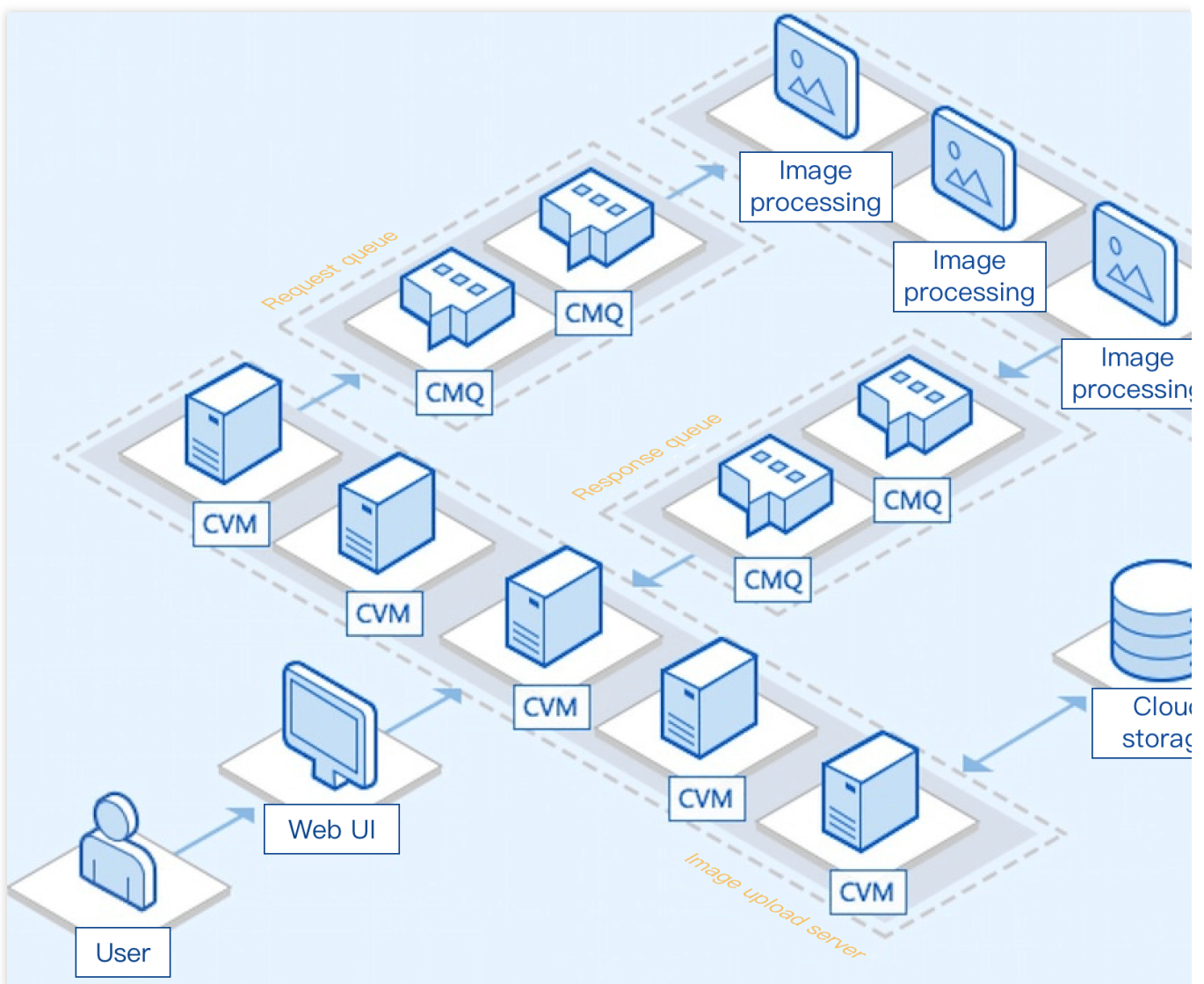
Qidian.com

Success Stories

Online Image Processing

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An image processing company builds an online image processing service in Tencent Cloud which enables users to upload their images and specify operations to be performed on them, such as cropping, red eye removal, teeth whitening, colorization, contrast adjustment, and thumbnail generation. A user can upload an image, submit a task, wait for the image to be processed, and download the output image. The time taken for processing varies by operation, from several seconds to several minutes, and the user may upload several, dozens of, or hundreds of images at a time. Therefore, the total processing time is subject to the number of uploaded images, image size, and selected operations.



After TDMQ for CMQ is integrated to implement the above-mentioned needs, user images will be stored in Tencent Cloud storage (such as CBS and COS), and each user operation request will be stored in the request queue as a message. The message content is an image index composed of elements such as the image name, operation type in user request, and image storage location index key.

The image processing service running on CVM gets a message (image index) from the request queue. The image processing server downloads the data from the cloud and edits the image. Then, it sends the processing result to the response queue and stores the output image in cloud storage. After this process is completed, the user has stored all the original and output images in cloud storage and can download them for use at any time.

More details about scalability and high reliability:

Even if the image processing service is temporarily unavailable due to bugs or other problems, as TDMQ for CMQ is used, the crash will be imperceptible to the user. In this case, on one hand, the user can still upload images, and the web server can still send messages to the request queue where the messages will be retained and can be fetched out only after the image processing service is back online; on the other hand, the image processing service does not need to record the messages being processed before the crash when it is implemented, and such messages can be processed again, as the message (including messages received sequentially and concurrently in the queue) receipt feature of TDMQ for CMQ ensures that messages can remain in the queue after being received until they are explicitly deleted by the recipient. This feature ensures decoupling of the image processing service and the image upload service.

If a single image processing service cannot meet user needs (i.e., users can upload images but cannot get the processing results after waiting for a long time), you can use TDMQ for CMQ to start multiple image processing services to satisfy ever-increasing user access needs based on its following two characteristics:

A single TDMQ for CMQ queue can be accessed by multiple servers simultaneously (i.e., message sending, receipt, and deletion can be concurrent).

A message will not be received by multiple services, which is implemented by the temporary message lock. The message recipient can specify the time during which the message is locked and needs to proactively delete the message after processing it. If the recipient fails to process the message, another service can get the message again after the lock expires.

These two characteristics ensure that the number of processing servers can be dynamically adjusted according to the load.

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TDMQ for CMQ meets the three key needs of Qidian.com operated by China Literature:

1. In the **Zhangyishucai** operation system, consumer crediting in the feature of grabbing red packet monthly tickets is async. The credit information will be first written to a message queue and then pulled by the consumer. After the consumer confirms that the message is successfully consumed, the callback API will delete the message from the queue.
2. In another scenario, major systems of Qidian.com such as OPS, alarming, and operations generate massive volumes of logs. The logs will be first aggregated into TDMQ for CMQ, and the backend big data analysis clusters will continuously pull them out of TDMQ for CMQ and analyze them based on the processing capabilities. TDMQ for CMQ can theoretically retain an unlimited number of messages, bringing you complete peace of mind when using it.
3. A feature similar to message rewind in Kafka is provided. After business consumption is successfully completed and the messages are deleted, message rewind can be used to consume the deleted messages again. The offset position can be specified for flexible adjustment. This feature facilitates Qidian.com in reconciliation and business system retry.

The overall business of Qidian.com presents high pressure on TDMQ for CMQ, as the API request QPS exceeds 100,000, and the total number of daily requests exceeds 1 billion. TDMQ for CMQ can easily support Qidian.com with high stability under such huge business pressure.

The TDMQ for CMQ backend cluster is imperceptible to users, and the TDMQ for CMQ controller server can schedule and relocate queues in real time based on the load of the cluster. If the request volume of a queue exceeds the service threshold of the current cluster, the controller server can distribute the queue routes to multiple clusters to increase the number of processable concurrent requests. In theory, TDMQ for CMQ can achieve unlimited message retention and extremely high QPS.

See the following figure:

