

# **Tencent Container Registry**

## **Product Introduction**

## **Product Documentation**



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# Product Introduction

## Product Overview

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## Product Introduction

Tencent Container Registry (TCR) is a container image cloud hosting service provided by Tencent Cloud. It has the following features:

**Security management:** TCR stores and distributes Docker images and Helm charts and supports image security scanning. It also provides enterprise users with fine-grained access permission management and network access control.

**Business expansion:** TCR supports worldwide synchronization and triggering of images, and meets enterprise users' requirements for using Continuous Integration/Continuous Delivery (CI/CD) workflows to expand their global businesses.

**Fast deployment:** TCR allows large-scale container clusters that contain over 1000 nodes to concurrently pull images of several gigabytes to ensure fast deployment of the container service.

With the TCR service, you can enjoy secure and efficient image hosting and distribution services in the cloud, without needing to build or maintain the image hosting service. In addition, you can use TCR together with [Tencent Kubernetes Engine](#) to smoothly deploy containers in the cloud.

## Product Type

Both the TCR enterprise and Personal Editions are available.

### Enterprise Edition

The TCR Enterprise Edition provides an enterprise-class, exclusive, and secure image hosting service. It is suitable for enterprise container users who have strict data security and compliance requirements, whose businesses are distributed in multiple regions, and whose cluster scales are huge. TCR supports the preceding features and is constantly updated. The TCR Enterprise Edition is currently in the beta phase and available for free. Enterprise-class container users are welcome to apply for it.

### Personal Edition

The TCR Personal Edition provides a basic on-cloud image hosting and distribution service. It is suitable for the R&D and testing processes of personal container users or enterprise users who do not have a large production scale, have a small cluster scale, and have less strict data security requirements. The TCR Personal Edition is a shared service in the cloud. That is, all TCR Personal Edition users share the service backend and data storage, and quotas are imposed on image hosting, upload, and download. The TCR Personal Edition is free of charge. You can visit [Tencent Kubernetes Engine - Tencent Container Registry](#) to get started.

# Advantages

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## Exclusive Cloud Service

You can quickly create a repository and push or pull container images without needing to build or maintain the image hosting service. A TCR Enterprise Edition instance has an exclusive service backend and backend storage. Compared with other shared image hosting platforms, such as DockerHub, TCR Enterprise Edition instances are exclusive to a single tenant. You do not need to worry about the influence of other users or use restrictions. The TCR Enterprise Edition can guarantee your data security and privacy.

## Stable and Reliable

TCR instances adopt a container-based deployment mode. You can dynamically adjust the service capabilities based on actual situations to cope with spikes in business traffic. The TCR Enterprise Edition supports multiple specifications. You can deploy this service across zones to achieve local disaster recovery and high availability.

## Worldwide Synchronization

TCR can be deployed in multiple regions worldwide. With the TCR Enterprise Edition, you can customize rules to synchronize container images and Helm charts across regions worldwide. TCR meets the needs of enterprise container users for pulling container images from the nearest region when they expand business worldwide and implementing cross-region disaster recovery.

## Security and Compliance

A TCR Enterprise Edition instance has an exclusive cloud storage backend. Container images and Helm charts are stored in your COS bucket after they are encrypted. The TCR Enterprise Edition also supports fine-grained permission management, private and public network access control, and image security scanning to ensure enterprise users' data security and access compliance.

## Fast Distribution

TCR Enterprise Edition instances are available in different specifications and support P2P accelerated distribution to meet the concurrent pulling requirements of clusters in different scales. TCR allows a large-scale container cluster that contains over 1000 nodes to concurrently pull images of several gigabytes and ensure fast expansion and deployment of the container service.

## Support for Helm Charts

TCR supports the hosting and distribution of both container images and Helm charts. It is compatible with Helm V3. TCR allows Kubernetes users to use Helm charts and container images simultaneously and provides a consistent user experience.

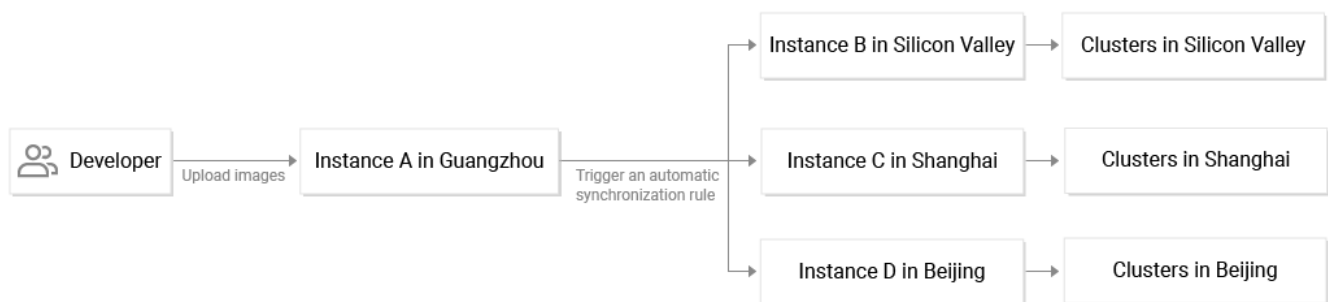
# Use Cases

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## Hosting and Distribution of Images Worldwide

When an enterprise-class container customer expands business throughout the country or to multiple regions worldwide, the customer needs to pull images from the nearest region. This not only improves the pulling speed to ensure fast business deployment, but also enables data transmission through private networks in the same region to reduce public network bandwidth costs.

TCR supports the use of shared instances and exclusive Enterprise Edition instances in multiple regions worldwide. In particular, an Enterprise Edition instance supports rule-based automatic synchronization among instances, which can quickly synchronize newly pushed container images to instances in other regions. This not only allows the user to pull images from the nearest region, but also reduces the OPS costs and risks incurred by manual push of images to several regions.



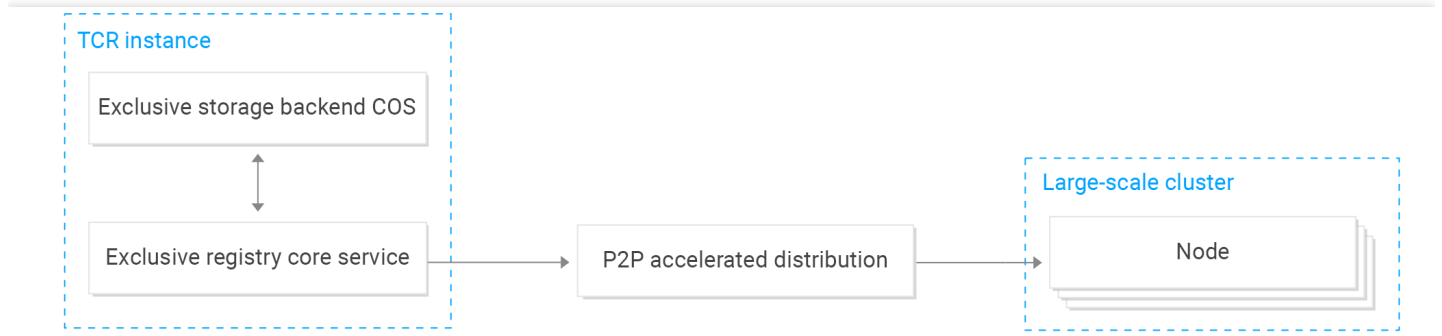
## Large-Scale Image Distribution

As the business scale of the enterprise user's container is continuously increasing or the user migrates their existing large-scale business to a container, the number of nodes in the container will increase as well, and some clusters can even have over one thousand nodes each. In addition, with the emergence of business scenarios such as deep learning and DNA computing, the container cluster starts to support a large amount of offline computing load, and the container images for these business scenarios are often several gigabytes in size.

To enable a large number of clusters to concurrently pull images of several gigabytes, the TCR Enterprise Edition uses the service backend that supports containerization deployment and the exclusive storage backend (COS bucket) to reliably cope with highly concurrent pulling requests from the Docker client. TCR also supports P2P image distribution. After enabling this feature in the Tencent



Kubernetes Engine (TKE) service, you can use the P2P accelerated distribution technology to accelerate image pulling and ensure fast business deployment.



## Containerized Continuous Deployment

After an enterprise deploys large-scale containers in the cloud, traditional business application development and deployment processes face challenges and the enterprise turns to the cloud native DevOps solution. TCR is closely integrated with TKE and CODING DevOps to deliver the cloud native DevOps solution. The enterprise only needs to configure Continuous Integration/Continuous Delivery (CI/CD) workflows on the CODING DevOps platform. After that, source code updates automatically trigger image building and security scans. Then, the images are synchronized to instances in multiple production regions worldwide. Finally, the business applications in the container cluster are automatically updated. If the enterprise already has complete CI/CD workflows, TCR also allows the enterprise to configure custom triggers to interconnect with the enterprise's own CD system and

smoothly incorporate TCR in the existing business development process.

