

Tencent Container Registry

Product Introduction

Product Documentation



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Contents

- Product Introduction
 - Product Overview
 - Strengths
 - Use Cases

Product Introduction

Product Overview

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Overview

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

Cloud native artifacts hosting: TCR supports the hosting of multi-architecture container images, such as Linux, Windows, ARM, etc. It also supports the management of Helm Chart v2/v3 and other cloud native artifacts that meet the OCI specifications.

Multi-dimensional security protection: TCR supports the encryption and storage of image data. It can perform image security scanning and block the high-risk image deployment. It also supports the network access control. It provides fine-grained permission management and operation audit to ensure the compliance of the business data operations.

Multi-regional fast distribution: TCR supports on-demand synchronization in global multi-region and fast image replication in domestic multi-region, implementing the image pulling from the nearest region. It supports P2P accelerated distribution and on-demand image mounting, significantly reducing the image pulling time for large-scale clusters, and ensuring the quick deployment and update of services.

Container DevSecOps: TCR is closely integrated with other products such as CODING DevOps and TKE. It provide delivery assembly line. With simple configuration, the code updates can automatically trigger image building, image scanning, and then update container applications, improving the delivery efficiency of enterprise cloud native applications, and ensuring the business safety.

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

Product Type

TCR provides the Enterprise Edition and Personal Edition:

Enterprise Edition

TCR Enterprise Edition provides an enterprise-class, exclusive, and secure image hosting service. It is suitable for individual or enterprise users who need to use the hosting service of cloud native artifacts in their businesses. TCR supports the preceding features and is constantly updated. TCR Enterprise Edition currently supports pay-as-you-go billing mode.

Personal Edition

TCR Personal Edition provides basic on-cloud image hosting and distribution services. With limited usage quotas, it is only applicable to temporary R&D process testing of individual or enterprise users. 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, uploading, and downloading. TCR Personal Edition is free of charge. You can start using it directly .

Specification

The TCR specifications are as follows (✓: supported; -: not supported).

Note

When the instance is using the features of Standard Edition or Advanced Edition, it is not allowed to degrade the instance specifications to editions which do not support the features. If you want to degrade the specifications, please delete related feature configurations manually first.

Feature Module	Features	Personal Edition	Enterprise Edition		
			Basic Edition	Standard Edition	Advanced Edition
Service assurance	SLA	Not supported	99.9% (compensation supported)	99.9% (compensation supported)	99.9% (compensation supported)
Instance management	Dedicated registry service	-	✓	✓	✓
	Dedicated domain name access	-	✓	✓	✓
	Dedicated data storage backend	-	✓	✓	✓

	Temporary/long-term access credential management	-	✓	✓	✓
Repository management	Multi-level repository directory	-	✓	✓	✓
	Helm chart hosting	-	✓	✓	✓
	Namespace quota	10	50	100	500 (you can apply to increase the quota)
	Image repository quota	500	1000	3000	5000 (you can apply to increase the quota)
	Helm repository quota	-	1000	3000	5000 (you can apply to increase the quota)
Data security	Encrypted storage of data	-	✓	✓	✓
	Image vulnerability scanning	-	✓	✓	✓
	Block Vulnerable Images	-	✓	✓	✓
	Public network access control	-	✓	✓	✓
	VPC access control	-	✓	✓	✓
	VPC access quota	-	3	5	10
	Operation log retention	-	7 days	15 days	30 days
Synchronous backup	Multi-region replications for single instance and nearby access	-	-	-	✓

	Cross-instance custom synchronization rules	-	-	✓	✓
	Multi-AZ disaster recovery in the same city	-	✓	✓	✓
Container DevOps	Webhook trigger	-	✓	✓	✓
	Container image compilation and building*	-	✓	✓	✓
	Cloud native delivery workflow	-	✓	✓	✓
	P2P accelerated distribution of images	✓	✓	✓	✓

Note :

Container image compilation and building feature is based on CODING DevOps service and provides free usage quota. If you need advanced features or want to add quota, please go to CODING DevOps service.

Free Usage of the Personal Edition

The Personal Edition service is provided for individual developers. The free usage quota is limited. SLA commitments and relevant compensation are not provided.

Strengths

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Exclusiveness in the Cloud

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. TCR Enterprise Edition can ensure your data security and privacy.

Worldwide Synchronization

TCR can be deployed in multiple regions worldwide. With 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 being encrypted. TCR Enterprise Edition also supports fine-grained permission management, access control of private and public networks, and image security scanning to ensure enterprise users' data security and access compliance.

Fast Distribution

TCR instances adopt a container-based deployment mode. With this mode, you can dynamically expand service capabilities based on actual situations to cope with spikes in business traffic. In combination with the self-developed P2P accelerated distribution plug-in, TCR instances support concurrent pulling of GB-level images by thousands of nodes.

Support for Helm Charts

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

Container DevOps

TCR is seamlessly integrated with TKE and CODING DevOps, supporting centralized configuration of image building, image scanning and distribution, and container application deployment. It can also implement automatic triggering of container application beta updates by code updates and improve application delivery efficiency.

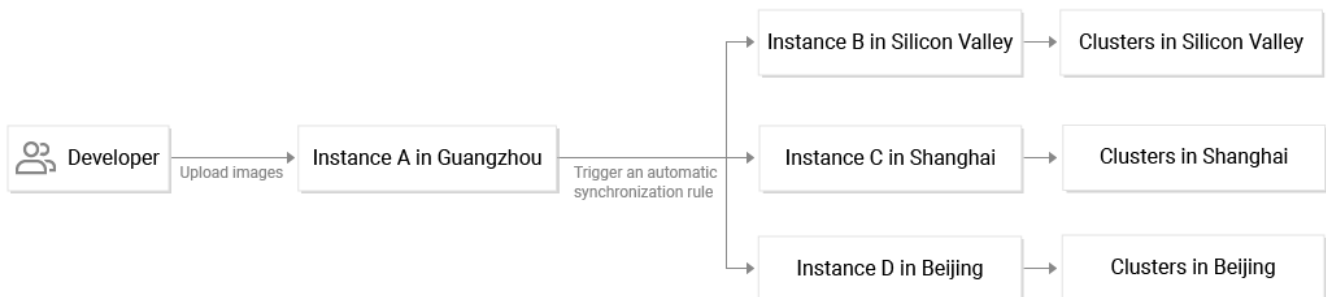
Use Cases

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Management 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 using shared instances and dedicated 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 OPS costs and risks resulting from manually pushing images to several regions.

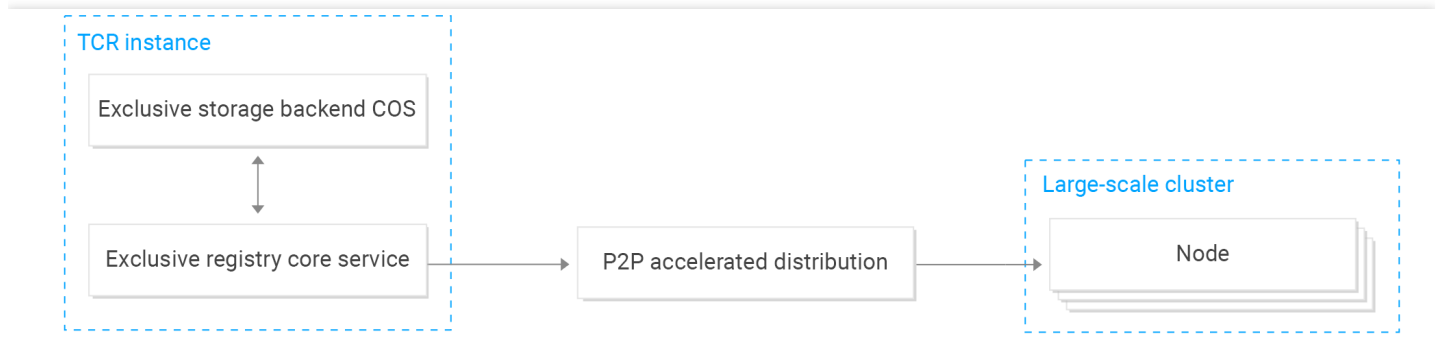


Large-Scale Image Distribution

As the business scale of the enterprise user's container continuously increases or the user migrates their existing large-scale business to a container, the number of nodes in the container also increases, and some clusters can even have more than 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, TCR Enterprise Edition uses the service backend that supports containerization deployment and the exclusive storage backend (COS bucket) to 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 integrated cloud-native DevOps solution. In this solution, the enterprise only needs to create the delivery workflow in the TCR console. After that, source code updates automatically trigger image building and security scanning. Then, the images are synchronized to instances in multiple production regions worldwide. Finally, 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 hitlessly incorporate TCR in the existing business development process.

