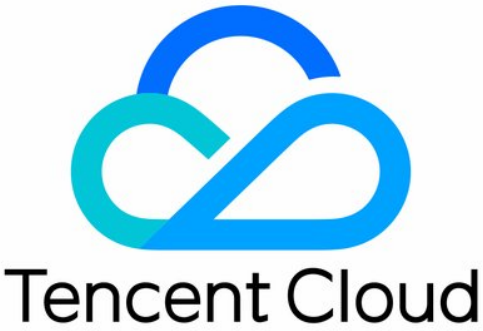
Tencent Container Registry Product Introduction



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Overview

Tencent Container Registry (TCR) is a cloud-based container image hosting service provided by Tencent Cloud. It has the following features:
Cloud-native Artifact Hosting: Supports multi-architecture container images (such as Linux, Windows, ARM, etc.) and management of Helm Chart v2/v3, as well as other cloud-native artifacts that comply with OCI specifications.
Multi-dimensional Security: Encrypted storage for image data. Supports image security scanning and high-risk image deployment blocking. Provides network access source control. Offers fine-grained permission management and operation auditing to ensure business data compliance.
High-speed Distribution Across Multiple Regions: Supports on-demand synchronization and rapid replication of images across multiple regions globally and within China, enabling nearby image access. Offers P2P distribution acceleration and on-demand image mounting, significantly reducing image pull time for large-scale clusters and ensuring fast business deployment and updates.
Container DevSecOps: Deeply integrated with CODING DevOps and Tencent Kubernetes Engine (TKE) products, offering delivery pipeline functionality. With simple configuration, code changes can automatically trigger image building, image scanning, and container application updates, enhancing the delivery efficiency of enterprise cloud-native applications and ensuring business security.
By using Tencent Container Registry, you no longer need to build and maintain your own image hosting service. Instead, you can enjoy secure and efficient image hosting and distribution services in the cloud. TCR can be seamlessly integrated with Tencent Kubernetes Engine (TKE) for a smooth container cloud experience.

Product Type

TCR provides the Enterprise Edition and Individual Edition:

Enterprise Edition

Enterprise Edition provides exclusive enterprise-grade image security hosting services for individual and enterprise customers who require cloud-native artifact hosting services in their production businesses. Container Image Service supports all the above features and is continuously updated. Currently, the Enterprise Edition supports both annual/monthly

subscription and pay-as-you-go billing options. For specific usage, please refer to: Enterprise Edition Quick Start.

Individual Edition

TCR Individual Edition provides basic cloud-based image hosting and distribution services with limited quotas, designed for personal use or temporary testing by enterprise customers. TCR Individual Edition is a shared cloud service, where all users share the backend and data storage, and image hosting and upload/download are subject to quota restrictions. Tencent Container Registry Individual Edition is free of charge and can be activated directly. For specific usage, please refer to: Individual Edition Quick Start.

Specifications

The specifications for Tencent Container Registry are as follows, where ✔ indicates support and indicates no support.

> **Note**
> When the instance is using the features of Standard or Advanced edition, it is not allowed to downgrade the instance specifications to editions that do not support the features. If you wish to downgrade the specifications, please delete the related feature configurations manually first.

Category	Feature Breakdown	Item	Individual Edition	Enterprise Edition			Note
				Basic	Standard	Premium Edition	
Service Guarantee	SLA	SLA	Unavailable	99.9% (Compensation Supported)	99.9% (Compensation Supported)	99.9% (Compensation Supported)	Enterprise Edition Service Level Agreement
Instance Management	Instance Deployment	Dedicated registry service		✔	✔	✔	Create an Exclusive Enterpri

		Multi-Availability Zone Service Disaster Recovery		✔	✔	✔	se Edition Instance
		Cross-Region Instance Disaster Recovery (Optional)		✔	✔	✔	
	Data Security	Dedicated data storage backend		✔	✔	✔	Official Documentation for Cloud Object Storage (COS) COS Multi-AZ Feature
		Multi-AZ Storage Disaster Recovery (Optional)		✔	✔	✔	
	Access Management	Dedicated Access Domain Name		✔	✔	✔	Using Custom Domain Names

		Custom access domain name		✔	✔	✔	
Image Management	Utilizing Quotas	Namespace Quota	10	50	100	500	TCR Individual Edition service does not support quota adjustment; quota adjustment is supported in the Enterprise Edition's Advanced tier.
		Image repository quota	Guangzhou: 500, Other: 100	1000	3000	5000	
		Image Tag Quota	100	No limit	No limit	No limit	
		Helm Repository Quota		1000	3000	5000	
	Item	Hosting OCI Artifacts		✔	✔	✔	OCI Artifact Management
		Helm Chart Hosting		✔	✔	✔	Hosting Helm Charts
		Multi-level repository directory		✔	✔	✔	Manage Image Repository
Data Securit	Image securit	Encrypted		✔	✔	✔	Overview of

y	y	storage of data					COS Bucket Encryption
		Image tag immutability		✔	✔	✔	Image Tag Immutability
		Image vulnerability scanning		✔	✔	✔	Container Image Security Scanning
		Image Deployment Blocking			✔	✔	Blocking High-risk Image Deployment
		Image Signature Verification				✔	Container Image Signature
	Cloud access management	Public Network Access Control		✔	✔	✔	Configuring Public Network Access Control
		Supported VPC access control		✔	✔	✔	Configuring Private Network Access Control
		VPC access quota	-	5	10	20	
	Permis	User-	✔	✔	✔	✔	User-

	sion Management	Level Account Management					level Account Permission Management
		Managing Service Accounts		✔	✔	✔	Service-level Account Permission Management
		Operation audit		7 days	15 days	30 days	Submit a ticket for inquiry
Image Distribution		Container Image Caching	✔	✔	✔	✔	Container Image Cache
	Accelerated distribution	P2P Accelerated Distribution	✔	✔	✔	✔	P2P Plugin
		Loading Container Images on Demand				✔	Loading Container Images on Demand
	Nearby Access	Cross-instance Custom Rule Synchr			✔	✔	Cross-instance (Account) Image Synchronization

		onization					
		Cross-Account Instance Image Synchronization			✔	✔	
		Nearest Access to Multiple Regions within the Same Instance				✔	Multi-regional Image Replication within the Same Instance
Container DevOps	System integration	Webhook trigger		✔	✔	✔	Triggers (Webhook)
		Secret-free Pulling for TKE Clusters	✔	✔	✔	✔	TKE Clusters Use the TCR Addon to Enable Secret-free Pulling of Container Images via Private

							Network
	CI/CD	Container Image Compilation and Build *	✔	✔	✔	✔	Implement Container DevOps with Delivery Pipeline
		Cloud-native delivery workflow	✔	✔	✔	✔	

Note:
Container Image Compilation and Building is based on CODING DevOps service, offering free usage quotas. For advanced features or additional quotas, please visit CODING DevOps Service.

Free Usage of the Individual Edition

The Individual 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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Dedicated Cloud Service

With no need for self-setup and maintenance, you can quickly create repositories and push or pull container images. TCR Enterprise Edition instances have independent service backends and storage. Compared to shared image hosting platforms like DockerHub, Enterprise Edition Registry instances are exclusively used by a single tenant, eliminating concerns about the impact and usage restrictions from other users, ensuring data security and privacy for customers.

Global 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

TCR Enterprise Edition instances have dedicated cloud storage backends, with encrypted container images and Helm chart data stored in the customer's COS bucket. The service also supports fine-grained permission management, internal and external network access control, and image security scanning to ensure data security and access compliance for enterprise customers.

Fast Distribution

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

Support Helm Chart

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

Container DevOps

TCR is seamlessly integrated with TKE and CODING DevOps, supporting one-stop 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 enhance application delivery efficiency.

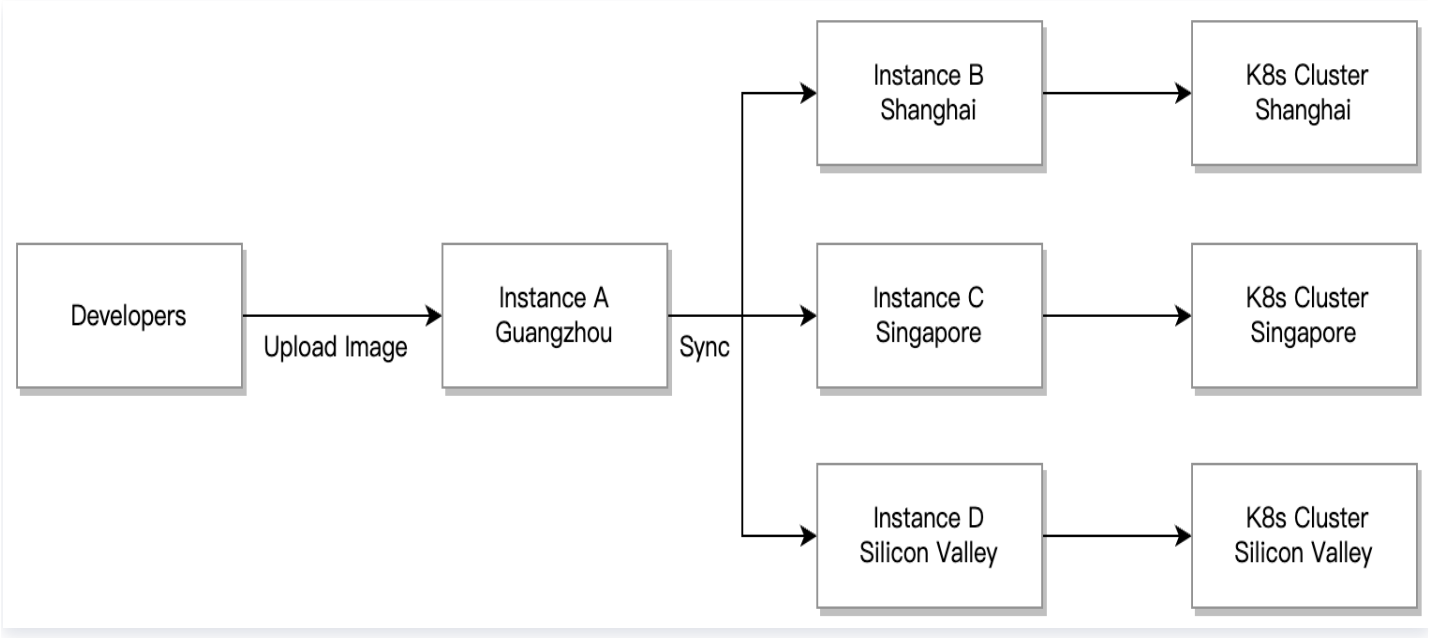
Scenarios

Last updated: 2023-09-12 17:52:31

Global Image Hosting and Distribution

As businesses expand across multiple regions, both nationally and globally, enterprise container users require the ability to pull images from nearby locations. On one hand, this proximity helps improve pull speeds, ensuring rapid deployment and launch of services. On the other hand, it allows for data transfer within the same region, reducing public network bandwidth costs.

Container Image Service supports the use of shared instances and dedicated Enterprise Edition instances in multiple regions worldwide. Among them, Enterprise Edition instances support rule-based automatic instance synchronization, enabling rapid synchronization of newly pushed container images to instances in other regions. This allows for the nearest image pull, reducing the operational costs and risks associated with manually pushing images to multiple regions.

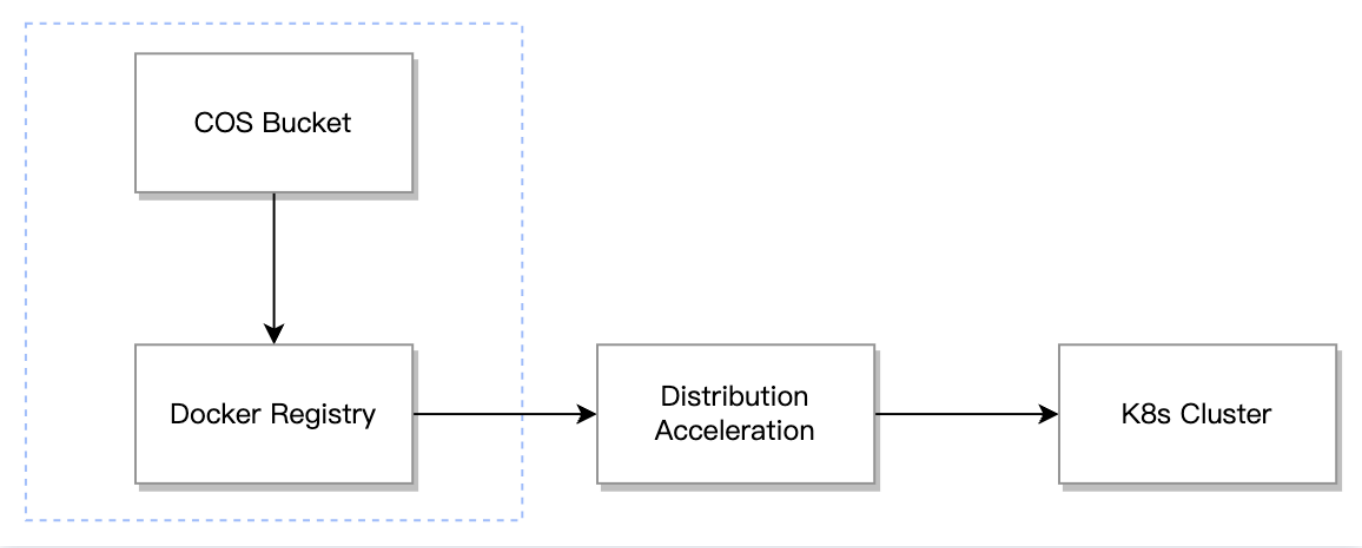


Large-Scale Image Distribution

As container businesses continue to expand or migrate existing large-scale operations to container environments, the number of nodes in enterprise users' container clusters is also increasing, with some clusters exceeding thousands of nodes. At the same time, with the rise of deep learning, gene computing, and other business scenarios, container clusters are

beginning to handle a large number of offline computing tasks, and the container images for these tasks are often GB-sized.

To address the concurrent pulling of GB-sized images by large-scale clusters, the Container Image Service Enterprise Edition features a containerized deployment service backend and dedicated storage backend (COS storage bucket), capable of handling high-concurrency Docker client pull requests. Additionally, the Container Image Service supports P2P image distribution. Users only need to enable this feature in Tencent Kubernetes Engine (TKE) to leverage P2P acceleration technology for faster image pulling, ensuring rapid deployment of services.



Containerized and Continuous Deployment

After completing large-scale container migration to the cloud, enterprise users face challenges in traditional application development and deployment processes, prompting a shift towards cloud-native DevOps solutions. The Container Image Service, in close collaboration with Tencent Kubernetes Engine (TKE) and CODING DevOps, provides an integrated cloud-native DevOps solution for enterprise users on Tencent Cloud. Users only need to create a delivery workflow through the Container Image Service console to enable automatic triggering of image building and security scanning upon source code updates, followed by synchronization to instances in multiple global production regions, and finally, automatic updating of business applications within container clusters. For enterprise customers with existing complete CI/CD workflows, the Container Image Service also supports custom trigger configurations, enabling seamless integration with self-built continuous delivery systems and incorporating the Container Image Service smoothly into existing business development processes.