Dynamic Route for CDN

Product Introduction

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What is Dynamic Route for CDN

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Dynamic Route for CDN is a CDN product that integrates **dynamic acceleration** and **static acceleration** technologies. This one-stop solution improves overall site performance and user experience, solving problems of slow response, packet loss, and unstable services. These problems are caused by factors such as a combination of dynamic and static page resources, cross-carriers access, network instability, single source sites, traffic spikes, and network congestion.

Features

1. Differentiate dynamic/static resources

Dynamic Route for CDN allows you to differentiate between dynamic and static content by specifying the content types, URIs, request methods, and custom HTTP headers in a few steps.

2. Accelerate dynamic and static resources separately

With simple configuration rules, both dynamic and static resources can be accelerated simultaneously:

- **Static resources** can be obtained from the cache on neighboring CDN nodes.
- **Dynamic resources** can be obtained in a back-to-origin process using core technologies such as smart routing optimization and protocol optimization.

CDN and Dynamic Route for CDN

	CDN	Dynamic Route for CDN
Acceleration method	Edge node caching for static content, and global server load balancing	Edge node caching for static content, global server load balancing, and smart routing for dynamic content to avoid congestion and to solve problems with cross-carrier access performance

Supported resource types	Static content (such as HTML, JSS, image files, installation packages, and video files)	Static content (such as HTML, JSS, image files, installation packages, and video files) and dynamic content (such as dynamic request acceleration with .aspx, .asp, .jsp, .php, and .perl as the suffix)
Source site adaption	A distinction must be made between static and dynamic resource sites. Only source sites with static content are accelerated	Source sites, one-click access, and the flexible configuration of static and dynamic acceleration rules available in the Dynamic Route for CDN product do not need to be modified

Note: By default, a Dynamic Route for CDN service uses **dynamic acceleration** to accelerate all resources (static resources are obtained in a back-to-origin process using dynamic acceleration instead of being cached). To cache static files, add the Dynamic Route for the CDN domain name, manually configure the **Dynamic and Static Resource Rules** and specify the types of static resources.

For more information about quickly accessing Alibaba Cloud Dynamic Route for CDN, see Quick Start.

Functions

By leveraging core technologies such as static/dynamic resource separation, smart caching, route optimization, and transmission optimization, Alibaba Cloud Dynamic Route for CDN provides transmission acceleration, stability, basic protection, and flexible control. Its main functions include:

Transmission acceleration

Static/dynamic resource separation and static cache.

Access link optimization, compression, and merging of transmission content, smart routing, and link multiplexing.

All-node SSD acceleration.

Stability

Server load balancing, efficient back-to-origin, and QoS restrictions are supported.

Provides session persistence and a failover retry function to ensure efficient back-to-origin and information synchronization.

Source site health check tracks the back-to-origin link status through a four-layer and seven-layer detection process

Basic protection

Anti-leech function, supports the referer blacklist and whitelist settings.

IP blacklist and whitelist and UA blacklist and whitelist.

Panoramic information monitoring and full log downloading.

HTTPS settings

Full support for HTTP/2 and SNI shared IP technology.

Multiple certificate formats and no private key solution.

Flexible control

Customizable dynamic and static acceleration rules.

Console customization, self-service domain name configuration, and API.

Supports multiple source site priority settings.

Supports generic domain name configuration.

Supports settings for website content expiration time, both by directory and URL.

Supports page optimization, refresh/warm up and other functions.

Benefits

Alibaba Cloud’ s Dynamic Route for CDN provides dynamic and static acceleration for dynamic and static resources respectively, improving the access speed of websites that use a combination of dynamic and static content, providing clients with a fast, reliable, and smooth experience.

Dynamic Route for CDN currently has four major advantages: stability, speed, ease of extension, and cost-effectiveness.

Stability

Sufficient node coverage

Over 1,000 domestic nodes, over 200 overseas nodes, more than 80 Gbps single-node bandwidth, and full-network bandwidth capacity exceeding 80 Tbps. This is sufficient to handle sudden surges in traffic, providing stable acceleration services.

Advanced distributed system architecture

Server load is balanced across the entire network to ensure node availability.

Stable and efficient performance indicators

Over 95% hit rate and millisecond-level response time.

Optimized transmission protocols

Supports HTTP/2 and SPDY transmission protocols for fast, efficient, and stable data transmission.

Speed

Accurate cache

Uses a smart object heat-map algorithm and multi-level, hierarchical cache resources for accurate resource acceleration.

High-speed cache

High-performance cache system design, balanced use of CPU multi-core processing capabilities, and optimal use and control of random-access memory to maximize the IOPS

and throughput of the solid-state drive (SSD).

High-speed reading/writing

Each node has high-speed read/write SSD storage. With SSD acceleration capabilities, user access latency is reduced dramatically, and availability is improved.

Efficient back-to-origin

With the **Session persistence** function:

Partitions the back-to-origin path based on the client IP to ensure that logon session information is not accessed across sources. This solves the problem of multi-source sites sharing information.

Provides a **failover** retry function to ensure efficient back-to-origin and information synchronization.

Smart scheduling

Multi-level scheduling strategy

Some node failures do not cause unavailability for users.

Multi-system linkage

Coordinates with the security defense system, refresh system, and the CMS to achieve the best performance for each module.

Data scheduling in real time

Supports node-level traffic prediction to improve both the quality and accuracy of scheduling.

Efficient back-to-origin:

Automatically responds to and adjusts for traffic spikes. Dynamic Route for CDN provides a back-to-origin QPS speed limit to protect the availability of the source site.

The Waiting Room solution can customize waiting pages, waiting time, and release rules to optimize the user experience.

Ease of extension

Resource elastic extension

Charges per actual usage. Full coverage across carriers and across regions can be achieved once accessed.

Self-management

With the self-service console, you can add, delete, modify, and search for self-configured domain names. It also enhances and simplifies custom configuration options, and supports custom cache strategies, HTTP response headers, and other functions.

API interface

Provides services such as service opening, content refreshing, obtaining security monitoring data, downloading distribution logs, and so on.

Performance optimization

Smart compression

Intelligently compresses network transmission content, effectively reducing the number of bytes transmitted over the network, shortening data transmission times, and improving acceleration.

Page optimization

Removes redundant content such as spaces, line breaks, tabs, and comments on the page, reduces the size of the page itself, and combines multiple JavaScript/CSS files into one request, thereby reducing the total number of requests.

Refresh/warm up

Provides the ability to refresh the cache and warm up resources for the node in advance.

Cost-effectiveness

Optimal linking

Makes routing decisions to select the best back-to-origin path, using source site monitoring, real-time network quality detection, and smart routing technology for dynamic content.

Link multiplexing

Edge acceleration nodes receive user connections and establish a long link based on actual back-to-origin requests, effectively reducing the I/O consumption of source sites and relieving pressure on source sites.

- Analyzes upstream and downstream traffic conditions to ensure that the terminal is reached within a limited number of hops, avoiding public network failures and network congestion paths.
- The last hop adopts BGP/multi-line access nodes to ensure efficient back-to-origin from the same region and the same carrier.

Scenarios

Due to its unique advantages, Dynamic Route for CDN is applied extensively in e-commerce, social networks, government, business, gaming, finance, and other industries. This section describes common Dynamic Route for CDN application scenarios.

E-commerce

Background: E-commerce platforms include a number of online systems and links, with uses such as registering users, website login, product browsing, and payment processing. Among the important indicators for measuring consumption experience are network access speed and secure content transmission.

Appeal: Most e-commerce websites contain a mixture of dynamic and static content, where large image static resource files need acceleration to showcase products. At the same time, they also need to support online payment, flash sales, and promotions, all of which slow down the website response time and put pressure on the origin site.

Typical users: Travel platforms that offer flight tickets and hotel room booking services, platforms that allow consumers to buy take-away food and book taxis online, fast-moving consumer goods vendors, and vertical e-commerce platforms.

Dynamic Route for CDN ensures smooth user experience and increases user engagement, making it a perfect solution for sites with a mixture of dynamic/static needs.

Social networks

Background: More and more websites are adding dynamic content, such as comment sections or audio and video content. If a lot of users try simultaneously to open the same pages, especially breaking news pages, a website can be slowed down or even rendered unable to access.

Appeal: Users are placing more importance on stable access to websites and quick content updates. For websites like this, we recommend that you use the Dynamic Route for CDN service for better performance and user experience.

Typical users: Forums, blogs, and interactive news sites.

Governments and enterprises

Appeal: Cross-website acceleration and security attributes. Official business and government websites. These websites present a certain brand or image and increase public trust.

In addition to accelerating content using its many nodes, Dynamic Route for CDN can also resist DDoS and CC attacks, thereby meeting the needs of governments and enterprises that want to accelerate dynamic and static resources.

Gaming

Appeal: Performance and stability for gaming websites, security packet downloading, log-on services, gaming services, and other services. Gamers need even smoother support when logging on to game servers, and when trading, updating, and running games.

Typical users: Online gaming platforms are well-suited for Dynamic Route for CDN, as it can offer integrated acceleration services, including routing optimization, cache acceleration, and security assurance.

Finance

Appeal: High availability and network security, Trading processes primarily involve dynamic, interactive content, which can be exposed to risks if cross-network connections are unstable. The Dynamic Route for CDN service is therefore recommended for finance scenarios, as it safeguards every transaction.

Typical users: Online banking, mobile payments, credit card reward malls, mobile securities, P2P loans, and other Internet finance applications.

Limits

Limits for using Alibaba Cloud Dynamic Route for CDN include account compliance, quantity limits, operation frequency, and usage status.

Account compliance

- **Real-name registration**: On the Alibaba Cloud official website, real-name registration must be performed for an account set to use Dynamic Route for CDN service.

  ICP filing: The Dynamic Route for CDN domain name must have been filed with the Ministry of Industry and Information Technology (MIIT). For quicker ICP filing, we recommend using Alibaba Cloud Filing.

  > Note: We recommend storing the origin site of the Dynamic Route for CDN domain name on Alibaba Cloud ECS or OSS (Object Storage Service) for optimal acceleration effect. If such content is not hosted by Alibaba Cloud, access to the content of the origin site must be reviewed manually.

  Review: All domain names that access Dynamic Route for CDN must be reviewed. Domain names that do not currently support access to Dynamic Route for CDN include those that:

  cannot be accessed or do not contain any substantive information,

  link to a website where pirated software can be downloaded,

  link to an illegal hospital or an illegal medicines website,

  link to a website that involves pornography, drugs, or gambling.

  Charges generated from attacks to, or malicious downloading of content from, any of the above-mentioned domain names are to be paid by the domain name owners. Alibaba Cloud assumes no responsibility for such charges and all losses are borne by the user.

  Domains that have accessed Alibaba Cloud CDN are **reviewed** regularly. If any of the aforementioned violations are recorded, CDN acceleration for that domain name is immediately suspended and CDN services for all domain names under that user are suspended.

Note:

- If your business is compliant with the rules but your domain name is rejected on the grounds that it **cannot be accessed or does not contain substantive information**, you can create and submit a ticket that contains a snapshot of the website of your business (including its domain name). After the ticket is separately reviewed again, the system notifies you of the result of this second review.

If your origin site is deployed on ECS, check your ECS bandwidth regularly. We recommend that the bandwidth is at least 20% of your overall business.

If your origin site is deployed with security software, make sure the CDN nodes can access the origin site.

After the Dynamic Route for CDN service stops, all requests go directly back to origin.

For large files, the range 0-infinite is not recommended.

Quantity limit

Quantity of Dynamic Route for CDN domain names: An Alibaba Cloud account supports up to **20** Dynamic Route for CDN domain names. If you have to accelerate a large number of domain names, please apply for extra support.

Limit on the quantity of IP origin sites: Currently, the number of IP origin sites for each Dynamic Route for CDN domain name is limited to **10** IP addresses. In special scenarios where more IP origin sites must be added, apply for extra support.

Operation frequency limit

URL refresh: **2000** entries/day/account.

Directory refresh: **100** entries/day/account.

URL preheating: **500** entries/day/account.

Usage status limit

In accordance with retrieval rules, the system deals with Dynamic Route for CDN domain names in the following states with the following methods:

No access to a Dynamic Route for CDN domain name for over 90 days (including when the domain name is in the normal running state): The system automatically suspends this Dynamic Route for CDN domain name, but still keeps related records. If you want to continue usage, repeat the procedures to enabling the Dynamic Route for CDN domain name.

The Dynamic Route for CDN domain name is in the deactivated state (including not approved) for more than 120 days: The system automatically deletes records related to this domain name. To continue accelerating this domain name, add it again.