

# HTTPDNS

## Product Introduction

## Product Documentation



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# Product Introduction

## Overview

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### Overview

HTTPDNS sends DNS requests to the DNS server of Tencent Cloud over the HTTP protocol instead of the local DNS of the ISP over the DNS protocol. This helps avoid domain name hijacking and cross-network access problems caused by local DNS and eliminate DNS exceptions in mobile internet services.

### Purpose

The purpose of HTTPDNS is to address DNS query exceptions and domain hijacking on the mobile internet:

- Status quo of mobile DNS: the local DNS egress of an ISP performs NAT based on the destination IP address of the authoritative DNS or forwards DNS requests to other DNS servers. This prevents the authoritative DNS from correctly identifying the local DNS IP of the ISP and thus gives rise to DNS query errors and cross-network traffic.
- Consequences of domain hijacking: no network access (inability to connect to the server) or access to a phishing website.
- Consequences of cross-domain, cross-region, cross-ISP, or cross-border DNS queries: slow or even no website access.

### How It Works

- The client directly accesses the HTTPDNS APIs to get the optimal IP of the domain. (For disaster recovery reasons, we recommend you retain your ISP's local DNS as a backup.)
- After the business IP is obtained, the client directly sends requests to it over the business protocol; for example, for HTTP requests, the client can specify the `host` field in the headers and then send standard HTTP requests to the IP returned by HTTPDNS.

### Service Quality

HTTPDNS is highly available and responsive.

- BGP Anycast network deployment: HTTPDNS is connected to the BGP Anycast network architecture to establish BGP interconnection with top 17 Chinese ISPs. This ensures that user requests from ISPs can quickly access the HTTPDNS server. More ISPs are being connected to guarantee a faster service response.
- Remote disaster recovery and real-time failover: HTTPDNS has multiple nodes in multiple IDCs across China. If any node fails, it can seamlessly switch to a backup node to ensure high service availability.

## Features

- Proprietary intelligent SDKs (available for iOS and Android) that cover more than 100 million users.
- Support for encryption.
- SLA of up to 99.99%.
- Unlimited queries.
- Support for user access distribution reports.
- Support for EDNS Client Subnet.
- Ticket and telephone support.

# Use Cases

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## Eliminating ISP Local DNS Exceptions

HTTPDNS replaces the default DNS method of mobile and desktop applications with the HTTP protocol, avoiding network access exceptions caused by the ISP's local DNS service errors.

It is mainly used in the development of the following types of mobile applications:

- **News and game applications**

Applications that require a shorter access delay and less cross-network access and focus on fast response. Such applications connected to the service include Tencent Games and Autohome.

- **Ecommerce applications**

Applications that require a lower connection failure rate and higher business efficiency and focus on the access request stability. Such applications connected to the service include Jumei and Ele.me.

- **Social networking applications**

Applications with domains frequently hijacked that require smooth user access. Such applications connected to the service include Mobile QQ.

- **Audio/Video applications**

Applications that demand a higher smoothness and connection success rate for music and video playback. Such applications connected to the service include Bilibili and QQ Music.

## Lowering DNS Latency and Hijacking Risk

**Currently, HTTPDNS has covered more than 400 million users, and businesses connected to it see an over 60% reduction in user access failures caused by domain name hijacking and a 22% reduction in access delay on average.**

- After connection to HTTPDNS, Tencent Games sees a reduction of 13% in the DNS latency with much fewer cross-network access requests.
- After connection to HTTPDNS, Tencent News sees a drop of 22% in the user connection failure rate and a higher business success rate.
- After connection to HTTPDNS, QQ Music sees a drop of 13% in the overall user access latency.
- After connection to HTTPDNS, Mobile QQ sees a reduction of 99% in failures caused by domain hijacking.

# Strengths

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In terms of implementation, HTTPDNS simply replaces the DNS protocol with the HTTP protocol for resolving domains. However, this replacement brings enormous benefits:

## Elimination of DNS Query Exceptions

A DNS request bypasses the local DNS of the ISP and is directly passed through the IP of the HTTPDNS server, thereby eliminating DNS exceptions.

## Accurate Scheduling

HTTPDNS directly gets users' real IPs and leverages DNSPod's proprietary IP library and speed test system created with patented technologies to route requests to the optimal and fastest IDC node.

## Low Implementation Costs

To connect your business to HTTPDNS, only small modifications to the client are required at the access layer, with no need to root or jailbreak users' mobile devices. In addition, the simple structure of an HTTP request makes it compatible with various mobile operating systems. Overall, with the aid of HTTPDNS, DNS exceptions are addressed at minimum modification costs while the demand for accurate traffic scheduling is met.

## High Scalability

HTTPDNS provides a reliable DNS service, which allows your business to combine its own scheduling logic with the result returned by HTTPDNS to achieve more refined traffic scheduling. For example, you can specify to connect clients on a certain version to a specified IP address or to connect users on a network of a certain type to a specified IP address.

In summary, HTTPDNS can effectively avoid failures to access the expected optimal access point and therefore prevent business inaccessibility due to exceptions in the local DNS used by mobile internet users.

# Use Limits

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## HTTPDNS API Request Rate Limit

For a single user of HTTPDNS, there is no limit on the API request rate by default (for Enterprise Edition only).

- For Enterprise Edition users, there is no limit on the API request rate by default.
- For free trial users, the request limit is 100 QPS per IP and 1,000 QPS per domain. After the limit is exceeded, packet loss or response failure/delay will occur. We recommend you use Enterprise Edition for your business to avoid being affected by the rate limit. For directions, see [Activating HTTPDNS](#).