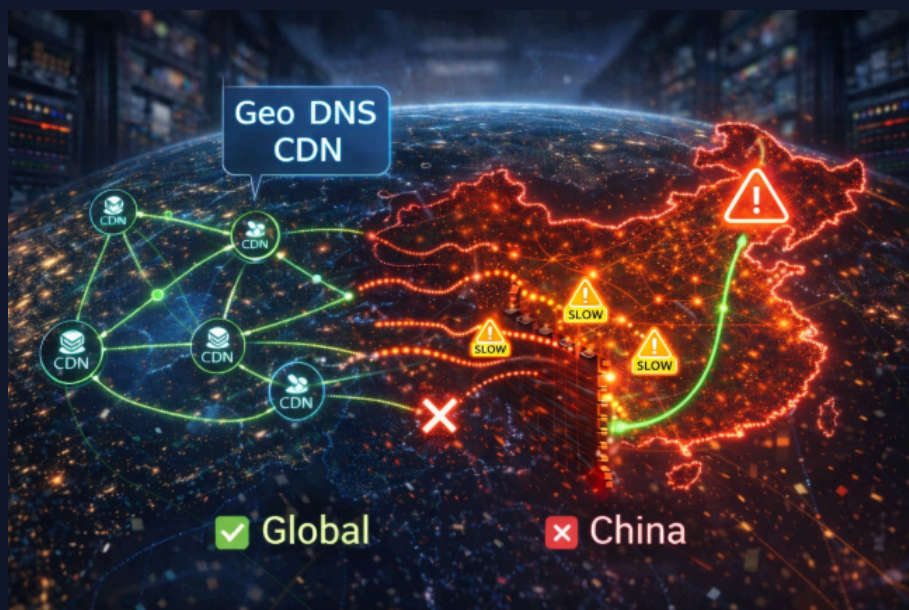




Geo DNS and CDN services

Geo DNS and CDNs are powerful tools for improving global website performance — but China has unique DNS, routing, and compliance constraints that change how these technologies behave.

The core idea is simple: make DNS resolution fast in China, and make content delivery local (or as close to China as possible) without breaking access or compliance.



Foundation Being seen in China articles

Discovery Being found in China article

Execution Start trading in China articles

Focus: performance + China constraints

Audience: overseas businesses

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What problem are we solving?

For users in mainland China, overseas websites often fail to open reliably even when the server is online. The most common reason is not the web server itself — it is DNS resolution and international routing.

When DNS resolution is slow, the experience from China can look like:

- “Website not found” or “page cannot be displayed”
- The page loads only after 2–3 attempts
- Parts of the page never load (fonts, scripts, analytics tags)

Practical takeaway: Before considering CDNs, make sure your domain name resolves quickly in *China*. If DNS is slow, everything else breaks.

Geo DNS: what it is

Geo DNS means returning different DNS responses based on the user's location. The usual goal is to route users to the nearest server (or nearest region) to reduce latency and improve reliability.

Typical Geo DNS behaviours:

- China users → China/Asia endpoint
- Europe users → EU endpoint
- US users → US endpoint

Why Geo DNS can fail for China

Geo DNS relies on fast, predictable DNS resolution and accurate geo-location from the resolver path. In China, two constraints matter:

- **DNS latency:** DNS lookups from China to overseas name servers can be hundreds of milliseconds. In fast Chinese networks, slow DNS is often treated as a failure.
- **Resolver behaviour:** the “location” used by Geo DNS may be the location of the DNS resolver, not the end user, which can reduce accuracy.

Important for China: Geo DNS is only reliable if your domain uses a China-appropriate DNS service. In practice, this usually means the domain is purchased/managed through a China-capable supplier.

CDN: what it is

A **Content Delivery Network (CDN)** caches and serves web assets (images, CSS, JavaScript, downloads, sometimes full pages) from edge locations close to users.

A CDN typically helps with:

- Faster page loads (especially for images and scripts)
- Lower load on your origin server
- Improved resilience during traffic spikes

CDN reality for China

CDNs can be helpful for China, but only when you account for:

- **Compliance:** using edge nodes inside mainland China often requires local licensing (ICP-related requirements) and a China-based provider relationship.



Quick checklist

Use this before you commit to Geo DNS or a CDN for China.

- Is your domain DNS fast inside China (not just outside China)?
- Is your China routing plan clear (HK/Singapore/Japan/Taiwan vs mainland)?
- Do you have multiple endpoints (or a clear fallback) for Geo DNS?
- Are you relying on Google-hosted resources (fonts/scripts/APIs)?
- Do you need edge nodes inside China (ICP implications), or is “near-China” enough?
- Have you tested real page load from China (DNS + all resources), not just ping?

Reminder: A fast CDN cannot compensate for slow DNS resolution in China. Fix DNS first.

Need help?

If you want help selecting a China-ready DNS/CDN architecture and testing from China, contact support@accesstochina.com

- **International routing:** even when a CDN brand has “China” options, international routing into China can still be inconsistent for certain networks and regions.
- **Third-party dependencies:** if your page depends on blocked or heavily throttled services, the CDN will not fix the underlying dependency.

Rule of thumb: A CDN accelerates what it can cache and serve. It does not fix slow DNS, blocked third-party services, or poor origin routing unless the architecture is designed for China.

A practical architecture that works

For most overseas businesses, a China-friendly approach looks like this:

1. **Buy/manage the China-facing domain via a China-capable supplier** so you can use a DNS service that resolves quickly inside China.
2. **Use a clear routing plan:** China users to an Asia endpoint (Hong Kong / Singapore / Japan / Taiwan, depending on your case), non-China users to your normal regions.
3. **Use a CDN where it makes sense** for static assets, but do not assume “global CDN” equals “works in China”.
4. **Remove fragile dependencies** (e.g., Google-hosted fonts/scripts) by self-hosting or using China-accessible alternatives.

When you should NOT use Geo DNS

- If you cannot make DNS fast inside China.
- If you only have one viable origin and cannot maintain multiple endpoints.
- If your application must maintain strict session affinity, but your routing strategy cannot guarantee it.

Testing: what to measure

Testing from China should include the full journey:

- DNS resolution time (first and repeat)
- TCP/TLS connection time
- Time to first byte (TTFB)
- Third-party resource timing (fonts, scripts, trackers)
- Full visual load time

Related: How Name Servers (NS) and DNS operate in China

Next step: Website upgrades for China visibility

 Test a web page from China

 Download "GEO DNS and CDN Services" paper(PDF)

Access to China — Geo DNS and CDN services for global performance, with China-specific constraints.

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