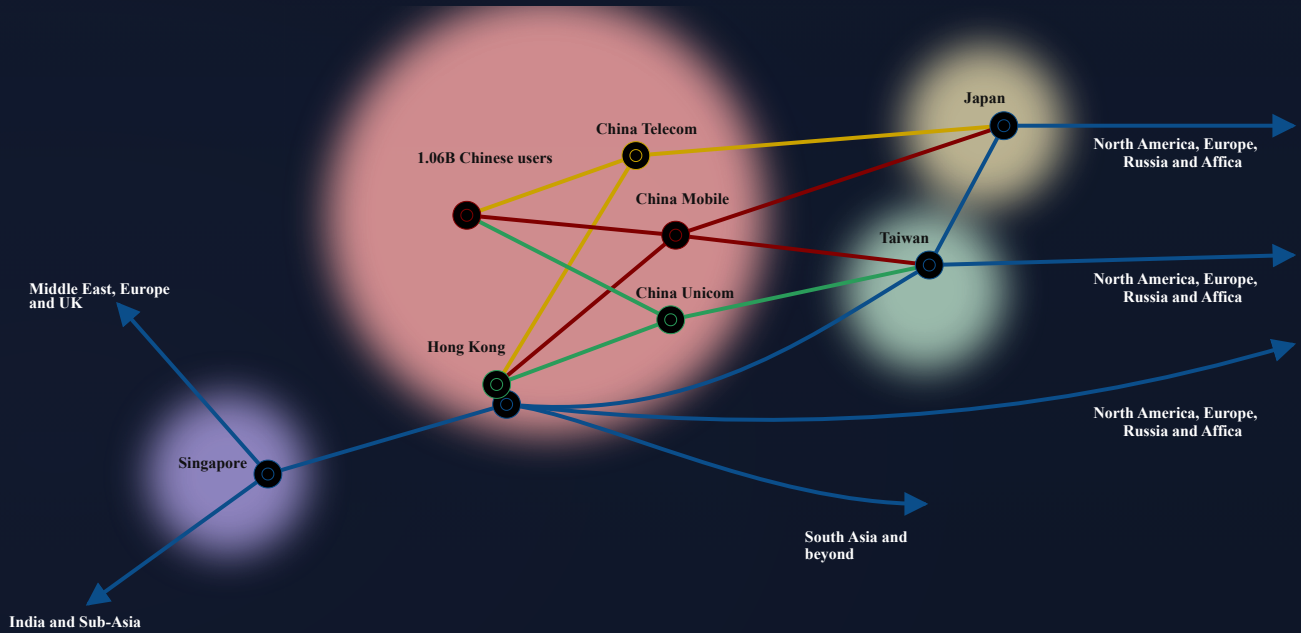




Structure of the Internet in China

China's national networks are among the fastest in the world, but bridging between carriers and international routing rules can make overseas content slow or unreliable.

Understanding how traffic flows between China Telecom, China Unicom, and China Mobile — and how traffic exits/enters China — helps you choose the right hosting and network strategy.



Foundation Being seen in China articles

Discovery Being found in China article

Execution Start trading in China articles

Focus: infrastructure + routing Audience: overseas businesses Last modified: v5.1 – 15 October 2026

Major networks and organisations

Major Internet Service Providers (ISPs) and telecom companies dominate China's internet infrastructure. The three primary national networks are:

- **China Telecom** — one of the largest operators, with extensive fixed-line broadband and backbone capacity.
- **China Unicom** — the second-largest, with major fixed-line and mobile infrastructure and a substantial international presence.
- **China Mobile** — the largest mobile operator by subscribers, with extensive 4G/5G coverage and a sizeable fibre network.

Other important organisations include:

- **CERNET** — China Education and Research Network, connecting universities and research institutions.
- **CNNIC** — manages China's domain names, IP addresses, and network information.
- **China Mobile International** — international connectivity and global network infrastructure supporting cross-border communications.

Practical takeaway: If you want consistent reach inside mainland China, ensure your provider has strong connectivity to *all three* major networks (Telecom, Unicom, Mobile) — not just one.

In summary

- China Telecom, China Unicom, and China Mobile are the three primary ISPs in China, each with extensive infrastructure and broad services.
- CERNET serves academic and research users with high-speed connectivity.
- CNNIC manages key parts of internet governance and critical infrastructure (domains, IPs, network information).

Bridging between networks

China's national network is extremely fast: many connections are measured in just a few milliseconds (ms) over large distances. However, there are notable bottlenecks:

- **Telecom ↔ Unicom bridging (Beijing hub):** typically 10–20ms, but can slow to over 250ms during daily peak periods due to limited capacity.
- **China Mobile bridging:** occurs across multiple hubs (e.g., Beijing, Shanghai, Guangzhou) and appears less affected by the same single-hub constraint.
- **International ingress capacity:** data entering China is subject to restrictions; during peak times, some overseas sites can take minutes to load.

Note: Traffic from China to overseas can be slightly faster than traffic entering China — but overseas users may still find Chinese sites slow due to the same international constraints.



Quick checklist

Use these checks when deciding how to host and route traffic for China.

- Does your provider have strong connectivity to **Telecom**, **Unicom**, and **Mobile**?
- Have you tested cross-network bridging performance at peak times?
- Is your "Hong Kong" provider truly direct to mainland China, or routed via Japan/Taiwan?
- Are overseas routes going via North America when faster routes exist via the Middle East?
- Have you tested real page loads from inside China (not just ping)?

Note: Ping tests often succeed even when pages are slow or broken due to routing, throttling, or blocked third-party resources.

Need help?

If you'd like help reviewing network routing, hosting choices, and China performance, contact support@accesstochina.com

China's public Internet routing rules

While China's networks can connect nationally and internationally, they operate within public internet rules that shape how international traffic is routed:

- **International egress:** public international traffic typically exits via **Japan** or **Taiwan**, with much of it routed onward via the **USA** for distribution.
- **Hong Kong exception:** public international traffic is allowed in Hong Kong if it is terminated in Hong Kong.
- **No public transit via Hong Kong:** public international traffic is not allowed to pass through Hong Kong onto the global internet.
- **Flow restrictions on some IP ranges:** some destinations may be throttled (capacity-limited), resulting in extreme variability (e.g., minutes to load at peak times).

Why this matters for routing and performance

Internet traffic "routing" is simply the path traffic follows from point A to point B. Traffic often does not follow the most direct route — it follows cost-effective paths for providers, which may not be the fastest for end users.

Selecting your hosting provider and upstream network is critical to the performance of your website, applications, and media content for users in China.

Hosting options for being seen in China

Mainland China hosting is typically the best way to be seen inside China — provided your hosting provider connects well to all three major networks:

- China Telecom
- China Unicom
- China Mobile

This option generally requires a Chinese company presence and an **ICP certificate**. Operating in mainland China can also introduce local compliance, tax, and accounting requirements.

Hong Kong hosting can be effective *only* if the provider has a genuinely direct connection to mainland China. Some providers route mainland traffic via Japan/Taiwan (and sometimes onward via Europe/USA) to reduce costs, which can make performance worse.

Guidance: Only use a Hong Kong-based presence if it connects directly to mainland China and provides strong routing to the rest of the world (often via Europe through the Middle East, rather than via North America).

If direct HK-to-mainland connectivity is not available, hosting in **Japan** and **Taiwan** can be more reliable and cost-effective — especially for large data volumes.

Singapore can be suitable for South Asia but is often a poor option for mainland China performance because traffic frequently transits via Taiwan or Japan and there is no direct link into the mainland.

How China connects to the rest of the world

As noted above, traffic from mainland China to destinations outside mainland China (except Hong Kong) is generally routed through Japan or Taiwan. From these hubs, much of the traffic routes to North America for distribution.

- Crossing the Pacific and then returning to Asia can add **150–200ms** of latency.
- This “via North America” routing can also affect destinations in India, Singapore, and Hong Kong.

When selecting a network in Asia, verify routing patterns such as:

- South Asia traffic often travels south via Taiwan → Hong Kong → Singapore/India.
- Australia follows similar paths before splitting in Hong Kong.
- Much “rest of world” traffic (including Russia in some cases) routes via North America.
- Europe via North America is noticeably slower than routes via the Middle East.

China and Hong Kong connectivity

Connectivity between mainland China and Hong Kong can be expensive and is increasingly routed via Japan/Taiwan. If you use Hong Kong hosting, verify whether the provider has a true direct mainland connection.

Note that major Chinese “cross-border platform” services (for example, platform listings such as “Trading without borders”) are typically hosted in Hong Kong and use high-speed, carrier-grade links into mainland China and out to the rest of the world.

Looking forward

China (including China Mobile International) continues to expand international connectivity and global cable capacity. However, two underlying policy areas strongly influence outcomes:

- **Peering agreements:** many global ISPs maintain major infrastructure in the USA, making US-based routing cheaper — even when faster routes would be south/west (e.g., via the Middle East).
- **Firewall capacity:** increasing inspection/capacity can help reduce throttling impacts and improve consistent performance for permitted destinations.

Private network routes (e.g., via Russia to Europe) can provide significant performance advantages but may be costly and may still require mainland compliance (ICP rules).

Data centres in China

In practice, the network often determines which data centre or cloud services you should use. While major carriers offer data centre and cloud services, network capabilities can limit how many servers you can provision and how consistently users can reach them.

- Carrier-linked data centres may perform best for users on the same carrier but can degrade for other carriers at peak times.
- Carrier-independent data centres can support multiple networks, but you may need to manage multiple public IP ranges (each carrier uses its own address space).

Recommendation: Test connectivity across multiple regions and networks in China before committing to a provider. Sales claims are often made without considering bridging and routing realities.

Virtual Private Networks (VPN)

VPNs are not a reliable solution for improving public internet performance in China. VPNs may partially avoid some filtering, but they generally do not improve routing performance unless they use private cables and private routing. VPN availability can change rapidly.

Performance improvements: Improving website performance in China

 [Test a web page from China](#)

 [Download Structure of the internet in Chinese \(PDF\)](#)

Access to China — understand China routing and choose the right network to be seen in China.

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