



# Zscaler in China

Connectivity and service expectations  
in mainland China for domestic and  
international traffic

# This tech note highlights the following:

- The connectivity options that Zscaler provides for organizations with locations in mainland China
- The challenges related to internet connectivity and performance in mainland China
- Zscaler best practices for providing the required internet connectivity in mainland China

## Zscaler position in China

Zscaler is an overlay network and does not produce or serve its own content. A content request is generated by the end-user and the content provider delivers the response.

Simply put, if Zscaler did not exist, the request, response, and content delivery would still occur.

In China, only a content provider who is serving content from mainland China is required to have an ICP license. Zscaler does not generate or serve content in mainland China or offer additional encryption services. Zscaler uses standard carrier connectivity to exit China and any Great Firewall (GFW) or regulatory restrictions would be imposed on the traffic by the carriers utilized by Zscaler. Zscaler does not have the ability to influence the enforcement of any of these restrictions, and our customers are contractually responsible for complying with any such restrictions when using our services and products. Due to the unpredictable nature of China's domestic internet and international connectivity through the Great Firewall, user experience may vary from site to site or even by time of day.

Zscaler is constantly reviewing the dynamic regulatory landscape in China and reserves

the right to take any measures necessary to ensure the security of all customers on its cloud, including but not limited to a suspension or shutdown of service.

In light of this, Zscaler is committed to simplify our customers' transformation by deploying the Zscaler Zero Trust Exchange into China and providing various connectivity options for organizations with locations in mainland China. These options include Private Service Edge/Virtual Service Edge, and China Premium Access which is a SaaS-based premium option provided with our partners in China.

As with any jurisdiction, it is the ultimate responsibility of our customers to ensure their compliance with local regulations when using Zscaler services.

## Internet connectivity

There are three primary telecom operators in mainland China: China Unicom, China Telecom, and China Mobile. China Unicom covers the north, China Telecom covers the south, and China Mobile focuses primarily on wireless connectivity but has been making progress in wireline coverage.



Internet connectivity with mainland China is strictly regulated by the government, with sweeping laws banning various types of content and sites, and ongoing traffic inspection. Policies are enforced by the GFW, which controls access based on variables such as:

- Blocking of URLs and IPs (such as Google or Facebook)
- Alteration of DNS requests
- Applications (such as TOR)
- Keywords
- Other Variables—IPs, technologies, and other parameters not publicly disclosed

The policies can change without notice, and, at any given moment, certain traffic can either be blocked entirely or discouraged by throttling bandwidth. Although Hong Kong and Macau are part of China, they are currently largely exempt from these regulations being outside the control of the GFW.

We have observed that major events such as elections, holidays, and political events within China cause erratic behavior with regards to performance and consistency of application reliability before, during, and after such events.

[An example of the erratic performance can be found here.](#)

## Zscaler connectivity with China

Zscaler operates multiple data centers (DCs) in China: for more information please refer to [CONFIG](#) Page.

In addition to what is listed in the CONFIG page, Zscaler offers options for China Premium Access. For more information on the China Premium Access options, please visit our [webpage](#).

The Tianjin and Beijing DCs usually provide better connectivity for organizations connected through China Unicom, while the Shanghai DCs are typically better for China Telecom connectivity. Connectivity should be tested during peak business hours.

It should be noted that Zscaler does not guarantee international connectivity or quality of the connections, and that we have observed variance in quality and connectivity from our nodes to international destinations. This variance is sometimes positive and sometimes negative in terms of performance and availability.

### Considerations:

- PAC files: as all connections go through the GFW and are subject to government policy, Zscaler cannot guarantee performance or availability.
- ZIA Private Service Edge/Virtual Private Service Edge requires access to port 80/443 for monitoring and updates. Such access may require the customer to obtain a government license.

**Zscaler is committed to simplifying transformation for organizations with users in mainland China.**

## Troubleshooting connectivity issues in China

Chinese regulations prohibit end users from altering internet routes and paths. Troubleshooting must be done with the help of the local service provider. This often complicates or stalls the troubleshooting process, especially if inter-carrier issues or the GFW is at fault. Zscaler is committed to helping our customers troubleshoot reported issues, however long wait times between updates and resolutions should be expected.

For business-critical traffic, customers can procure the ZIA Private Service Edge/Virtual Private Service Edge solution and use their existing connectivity to reach the internet.

## International and domestic site accessibility

- Zscaler public DCs utilize standard domestic bandwidth from various operators including China Telecom and China Unicom.
- Organizations using Zscaler public DCs should experience consistent domestic connectivity. International destination connectivity and quality may vary based on the provider being used and conditions on the ground.

- Customers will experience similar performance when accessing domestic websites and SaaS applications through Zscaler as they would experience through any other local service provider.
- For organizations requiring a more premium experience, Zscaler recommends purchasing our China Premium Access solutions to access international websites and SaaS applications.
- Customers already using premium or private connectivity in their locations may experience different performance when using Zscaler public DCs. We therefore recommended that you explore our China Premium Access solutions for providing access to international destinations.
- Zscaler Premium DCs generally perform similarly with customer's own premium connectivity for international content, although enforcement and behavior may differ.

## Observations regarding traffic from China to international destinations

While providing services in China, we have observed several behaviors of traffic originating in mainland China towards international destinations, especially during business hours. This applies both to customers attempting to connect to Zscaler DCs outside of China and to Zscaler DCs in China connecting to international destinations.

- **Certain ports, protocols (IPsec, GRE), or IPs are unreachable** — At times, or in general, certain international destinations become unreachable from mainland China but are reachable from other locations. All attempts to involve local Chinese carriers result in no feedback or inconclusive responses with

Zscaler provides organizations with multiple connectivity options to enable access to international websites and SaaS applications for users in mainland China.

no real resolution. In such cases, customers frequently fall back on a private solution such as ZIA Private Service Edge/Virtual Private Service Edge/network solution for the impacted application(s).

- **Certain applications slow down during peak business hours** — We have observed applications hosted outside of China by providers like Amazon, Akamai, Google Cloud, Microsoft Azure, or others performing poorly at times while performing well from other locations. We have been able to correlate some of these incidents to the overall political climate in China and abroad, as well as to engagements between the Chinese telcos and the particular cloud provider. In such cases, customers frequently fall back on a private solution such as ZIA Private Service Edge/Virtual Private Service Edge/network solution for the impacted application(s).

## Connectivity solutions

Zscaler is committed to our customers' successful network transformation and provides various connectivity options for organizations with locations in mainland China to enable access to international websites and SaaS applications for their users in mainland China.

### China Premium Access

- Customers can send their internet-bound traffic to a Zscaler DC hosted on a premium Chinese ISP that has access to both domestic internet in China and premium access to international websites and SaaS applications. Most traffic forwarding options are available, but subject to change (from Client Connector, Cloud Connector or Branch using a GRE or IPSEC Tunnel). All traffic is protected with a Zscaler Service Edge in the local premium ISP

### China Premium Access Plus

- Customers can send traffic to a Zscaler DC hosted on a premium Chinese ISP that has access to both domestic internet in China and combined with dedicated private connectivity. Hosted private infrastructure is dedicated for the exclusive use of that customer's traffic. All traffic forwarding options are available (from Client Connector, Cloud Connector or Branch using a GRE or IPSEC Tunnel). International traffic is protected with a Zscaler Service Edge in the local premium ISP. Due to the nature of this service, sizing and provisioning must be carefully planned by the customer.

“Using the China Premium link in the Shanghai office is significantly faster than using the local connectivity.”

**Infrastructure Engineer**  
Financial Tech Company

## On premises solutions

Virtual Private Service Edge/Private Service Edge can be used to avoid potential issues that can occur when routing through Zscaler public DCs

- ZIA Virtual Private Service Edge and ZIA Private Service Edge options allow customers to use any available premium solution (MPLS, CN2, etc.) while still protecting their users.
- A Virtual Private Service Edge can be deployed quickly while a Private Service Edge will take time to deploy, as there are provisioning and shipping logistics involved.

- ZIA VPSE/PSE requires access to port 80/443 for Client Connector Access.
- Both Virtual Private Service Edge and Private Service Edge support Zscaler Client Connector (Tunnel 1.0 and 2.0).

Please contact your Zscaler sales representative to discuss your connectivity and service options. All China Premium solutions must be evaluated and approved by Zscaler prior to deployment.

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### About Zscaler

Zscaler (NASDAQ: ZS) accelerates digital transformation so that customers can be more agile, efficient, resilient, and secure. The Zscaler Zero Trust Exchange protects thousands of customers from cyberattacks and data loss by securely connecting users, devices, and applications in any location. Distributed across more than 150 data centers globally, the SSE-based Zero Trust Exchange is the world's largest inline cloud security platform. Learn more at [zscaler.com](https://zscaler.com) or follow us on Twitter [@zscaler](https://twitter.com/zscaler).

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