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שגרירות ישראל בבייג'ינג

Accessing Cloud Services in China

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Introduction

The Great Firewall of China is a known concept that (among others) limits foreign IT service providers from reaching Chinese customers, without a technical localization process. This report serves as a general guideline for Israeli companies that wish to offer their SaaS and PaaS services in China, and need to get access to Chinese cloud services in order to do so.

The report has two major parts. After introducing the definition of cloud services, [Chapter 1](#) articulates the major regulations in China related to cloud services, and highly recommends to thoroughly understand the process of getting the license for offering SaaS/PaaS solutions by collaborating with a local business entity.

[Chapter 2](#) lists a series of Chinese main cloud service providers, and elaborates on two exemplar cloud service providers in China: Alibaba Cloud (domestic cloud service provider) and AWS China (international but already localized cloud service provider).

Moreover, pricing calculators and contacts are available for one to compare prices in [Appendix 1](#), and consult with specialists in [Appendix 2](#).

Definition of Cloud Services

"Cloud services" is an umbrella term that refers to a variety of IT services that are provided and accessed from a cloud computing provider. Data can be stored from a public cloud, private cloud, and hybrid cloud.

The three main types of cloud services are:¹

- **Software as a Service (SaaS)**, which allows users to connect to and use cloud-based apps over the Internet, for instance, email, calendar, and office tools (such as Microsoft Office 365);
- **Platform as a Service (PaaS)** is a complete development and deployment environment in the cloud, with resources that enable you to deliver everything from simple cloud-based apps to sophisticated, cloud-enabled enterprise applications;
- **Infrastructure as a Service (IaaS)** provides virtualized computing resources over the internet and offers essential compute, storage, and networking resources on demand. In fact, IaaS solution helps a firm reduce maintenance of on-premises data centers and save money on hardware costs.

Figure 1 below illustrates the relationship between these three types of services.

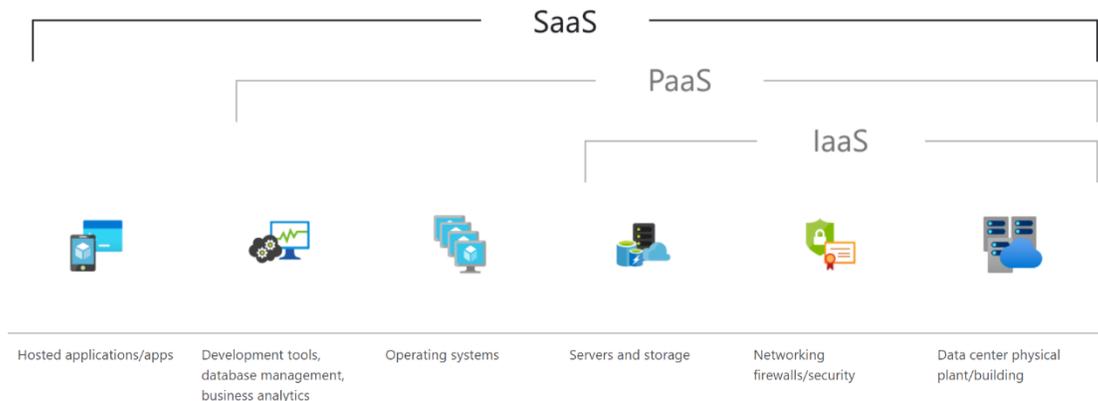


Figure 1: Main Types of Cloud Services²

¹ <https://azure.microsoft.com/en-us/overview/>

² <https://azure.microsoft.com/nl-nl/overview/what-is-iaas/#overview>



Chapter 1 – Mapping the Cloud Regulations in China

1.1 Growth of the Cloud Market in China

China generates an enormous amount of data all the time, which implies a huge demand for flexible, scalable, and affordable data storage. It has the largest online population in the world with more than 800 million internet users. A considerable number of online users and accompanying data together with the separate IT ecosystem in China, have driven the development of its domestic cloud services.

In 2020, China's cloud services market posted high growth. Due to the COVID-19 pandemic, China has experienced an accelerating pace of digitalization, leading to a massive cloud migration. According to the Gartner report,³ the Chinese market grew by more than 60% in cloud services in 2020, making it one of the largest and fastest growing markets in the world. In particular, China's SaaS market is growing rapidly.

In addition, **the government support for the local cloud computing market is expected to see continuing strong growth.** The country's 14th Five-Year Plan (2021-2025) articulates that China's digital economy, especially cloud computing, would be its focus for the coming five years. Hence, China's enterprise and government cloud adoption rate is expected to increase with its growing demand in digital and intelligence transformation and its advanced 5G infrastructure, and therefore China's cloud market will continue to advance with high prospects.

1.2 Regulatory Requirements

Online services are categorized as telecom businesses in China and subject to the strict regulation of the Ministry for Industry and Information Technology ("MIIT").

The Telecommunication Regulations of PRC, telecom business is divided into:

- **Basic telecom business**
- **Value-added telecom ("VAT") business, which includes cloud services** and are subject to different levels of scrutiny. Value-added telecom business refers to the provision of telecom and information services by utilizing the basic facilities of public networks. Based on Chinese government's commitment of entering into WTO, foreign investors theoretically can invest in VAT business through joint ventures with Chinese partners, as long as the foreign investors' equity interest does not exceed 50%. In practice, however, it is very difficult to obtain government approval.

³ <https://global.chinadaily.com.cn/a/202104/27/WS608766eca31024ad0baba959.html>



The operation of cloud services in China requires the VAT permit for Internet Resources Collaboration Service (“IRCS”).

The Telecommunication Regulations of PRC makes it clear that a telecom operator must obtain a license for business operation in China. Specifically, *The Classification Catalogue of Telecom Business*⁴ further divides VAT business into different sub-categories, each requiring a corresponding license.

1.3 Key Hurdles

The IRCS license is not open to foreign investors. According to Chinese regulations, SaaS software must be located on a server in China. This means that overseas SaaS companies that want to operate in China must provide their services through Chinese partners.

There are two main restrictions under the IRCS that fundament it:

- **Data Residency Restriction**

Data must not be removed from the territory of the People’s Republic of China. China’s Cybersecurity Law mandates that critical information infrastructure (CII) operators must store certain important data, including personal information relating to Chinese citizens, **within mainland China.**

The law mainly refers to:

- Personal credit information
- Personal financial information
- Population health information
- Map data
- Governmental information
- Accounting information
- Human genetic resource information.

- **Server Center Residency Restriction**

Operators also are subject to Server Center Residency Restriction which requires that cloud service providers must ensure that **their server centers are located in China** and fulfil the technology requirements of Chinese law.

- **Great Firewall of China**

Another key hurdle is the Great Firewall of China. This combination of legislative and technical measures including DNS filtering, deep packet inspection, and IP address blacklisting allows the government to effectively take down foreign websites whose content does not adhere to local

⁴ https://www.miit.gov.cn/zwgk/zcwj/wjfb/tg/art/2020/art_e98406cd89844f7e92ea1bcf3b5301e0.html



regulations. Companies that play by the well-documented rules can continue to operate websites in China which slows internet connections.

- **Internet Content Provider (ICP) Filing**

Furthermore, if an enterprise registered outside Mainland China intends to build a website in Mainland China and host the website on an instance located in the Mainland, the enterprise needs to apply for an Internet Content Provider (ICP) filing for the website based on requirements of the Ministry of Industry and Information Technology (MIIT). An ICP Filing certifies a website domain to be hosted lawfully on a server or CDN located in the Mainland. Customers who apply for ICP must have a Chinese local business entity and the domain name should be registered in China DNS provider with one local domain certificate.

- **Protecting Local Business Interests**

Last, there has been a long-established government policy of supporting domestic champions which encourages Chinese companies to do business with the Chinese partners, like Alibaba, Baidu and Tencent, tilting the playing field.

1.4 Find a Local Chinese Cloud Service Provider

There are a few solutions for the above-mentioned challenges, but in most cases, a foreign business will obtain its ICP license through a locally-owned Chinese company. The foreign company will then “borrow” or use the local Chinese company’s ICP license to run its Chinese operations. For example, American web giant eBay acquired its license through a Chinese partner called EachNet, while Microsoft partnered with a Chinese company to form a joint venture in China to operate its MSN service.⁵

Domestic cloud service providers can provide foreign firms with flexible options to realize the specific technical structure. For instance, foreign firms may choose to relocate and host the whole server of their SaaS products, or just to deploy a set of “proxy servers” on the domestic cloud infrastructure but to keep the original servers hosted outside China.

Red Lines Shall Not Be Crossed

More specifically, under the joint operating model, the red lines as follows during the course of cooperation shall not be crossed. Otherwise, the cooperation will be exposed to the legal risk of being deemed as “lease, transfer, and resale of telecommunications business licenses in a disguised way”:

- × The foreign partner directly signs contracts with the customer and charges the subscription fees and/or service fees;
- × When marketing and providing services, only foreign partner’s brand is presented to the customers without using the domestic partner’s brand or trade name;

⁵ <https://irglobal.com/article/obtaining-an-icp-license-in-china-a-business-necessity-for-any-web-based-presence-3e52/>

× Unlawfully providing to the foreign partner with user personal information and network data.⁶

Chapter 2 – Mapping the Major Local Cloud Service Providers

2.1 The Leading Cloud Infrastructure Service Providers in China

Alibaba Cloud, Tencent Cloud, and Baidu Cloud are the three biggest cloud companies in China, collectively accounting for about 60 percent of the market, according to figures from Canalys in 2021. Commanding a 39.8% market share, Alibaba is the market leader by a significant margin.

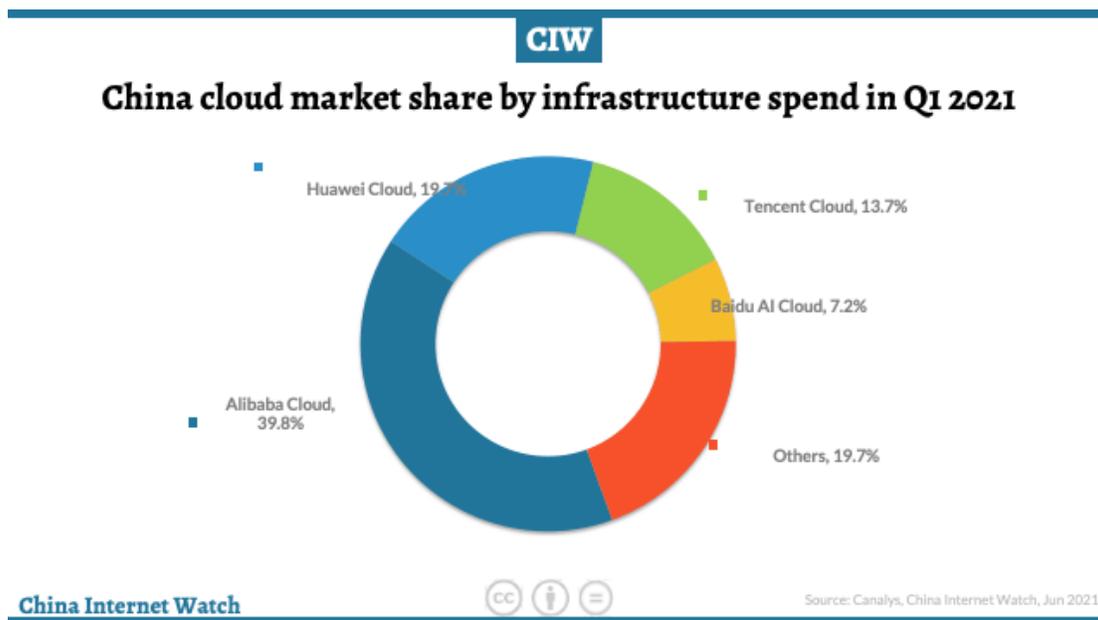


Figure 2: China Cloud Market Share by Infrastructure Spend in Q1 2021⁷

AWS and Alibaba Cloud have good reputation in customer services towards non-Chinese users. Therefore, we will focus on them in this chapter.⁸ For a fuller list of service providers' pricing and contact details, see [Appendix 1](#) and [Appendix 2](#).

⁶ <https://www.lexology.com/library/detail.aspx?g=2950e205-bc36-450f-8358-63d9e6c5a9cc>

⁷ <https://www.chinainternetwatch.com/30820/cloud-infrastructure-services/>

⁸ <https://eggplantdigital.cn/alibaba-vs-amazon-cloud-aws/>



2.2 Alibaba Cloud [Hangzhou]

Alibaba Cloud is owned by Alibaba Group, the largest cloud computing company in China, and in Asia Pacific according to Gartner. Alibaba Cloud operates data centers in 24 regions and 74 availability zones around the globe. It provides cloud computing IaaS, PaaS, DBaaS and SaaS, including services such as e-commerce, big data, database, IoT, object storage (OOS), Kubernetes and data customization, which can be managed from Alibaba web page.⁹



Advantages:

- **Wide Business Ecosystem**

According to Seeking Alpha,¹⁰ Alibaba Cloud serves more than 3 million corporate customers worldwide, including 38% of Fortune 500 companies, 80% of high-tech companies in China's mainland, and more than half of China's A-listed companies. Major clients include Ant Financial (an Alibaba affiliate which is the world's largest fintech company) and Weibo (a Chinese micro-blogging website in which Alibaba is an investor). In addition, Alibaba Cloud provides cloud computing services to online businesses and Alibaba's own e-commerce ecosystem.

Within the Alibaba ecosystem, several group companies can help an international business get a foot on the ground. Cainiao delivers goods even to remote areas; Alipay supports convenient payments on a trusted platform; the advertisement network Alimama spotlights one's brand; and promotional videos can be posted to Youku. This makes Alibaba very unique compared to the rest of China's cloud computing players.

- **Affordability**

Alibaba Cloud is recognized as less expensive than other leading services, e.g. AWS.¹¹ Please find [Appendix 1](#) for pricing information.

- **Low Latency**

Alibaba Cloud also delivers lower latency to mainland users than AWS, thanks to its tie-ups with China's top three network providers, China Mobile (CHL), China Unicom (CHU), and China Telecom Corp (CHA).

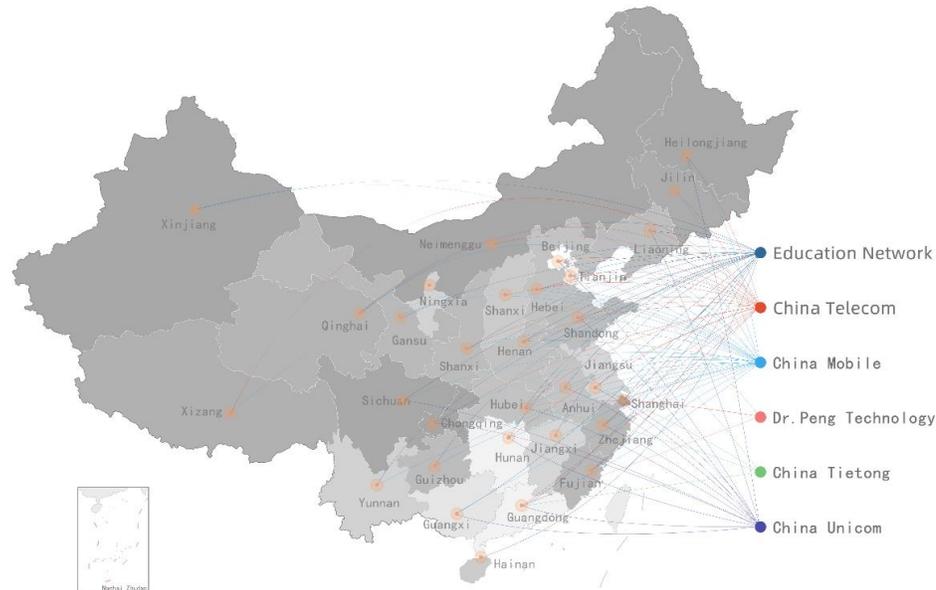
⁹ <https://www.alibabacloud.com/about?spm=a3c0ia.190302.6791778070.dnavwhya2.48db5d0fzJRu3p>

¹⁰ <https://seekingalpha.com/article/4346511-chinas-burgeoning-cloud-computing-market-is-tremendous-opportunity>

¹¹ <https://jaychapel.medium.com/aws-vs-alibaba-cloud-pricing-a-comparison-of-compute-options-c7ea928fd9c9>



"Using Alibaba Express Connect achieved 44% better average network latency versus using Public Internet between China and US," according to Deloitte "Alibaba Cloud for MNCs", 2019.¹²



Source: <https://www.alibabacloud.com/help/doc-detail/69890.htm>

- **Accessibility**

China Gateway is one of Alibaba Cloud's flagship solutions that helps customers in all sectors to tap into and scale up in China. Alibaba has local teams across the world to help with the end-to-end process of getting up and running in China, including a technical support team in the region itself, plus fast-tracked ICP registration and support. The website is accessible in English and it provides service in English as well.

The requirements for acquiring an ICP license are relatively high, and restricted in certain areas, but China Gateway can provide with assistance throughout the application process. Once a company has registered an Alibaba Cloud account and submitted its company details, they will review the application within one day and confirm if the documents have been submitted successfully and guide one through the process.

- **Register for China Gateway Networking Solution of Alibaba Cloud**

<https://resource.alibabacloud.com/event/sign?spm=a3c0i.253693.2517956970.2.b3ca2a4cRdHyXg&id=2447>

¹² <https://www2.deloitte.com/content/dam/Deloitte/cn/Documents/technology/deloitte-cn-alibaba-cloud-white-paper-for-mncs.pdf>



- **Free Trial**

Alibaba Cloud allows subscribers to use and access their cloud solutions and services on a trial basis. Subscribers even have the option to assess the quality of elastic computing, databases, storage, and application services <https://www.alibabacloud.com/free>.

For more information and registration in English go to [Alibaba Cloud website](#). In addition, English Customer service's details can be found in [Appendix 2](#) below.

2.3 AWS China [Beijing/Ningxia]

AWS (Amazon Web Services) is a comprehensive, evolving cloud computing platform provided by Amazon that includes a mixture of IaaS, PaaS and SaaS offerings.

Although AWS has dominated the global market with 33.8 percent of market share in 2020, in China AWS holds a limited amount of cloud market share, according to Canalys research¹³.



Advantages:

- **Professional Support**

AWS China professional services (The “ProServe”) in China consists of professionals with extensive industry practice knowledge and strong full-stack solution competency. AWS China ProServe have supported many multinational companies localize their headquarters aligned Landing Zone design, migrate to AWS China regions and work properly complying to customers’ global requirement. This has helped global customers easily roll out their applications to China and effectively support customers’ worldwide programs’ execution and business development.

More importantly, the process supports customers’ application deployment on AWS China adhere to China Multi-Level Protection Scheme 2.0 (MLPS2.0) requirements, which are administrative requirements found in Article 21 of the Cybersecurity Law. It was issued in 2019, requiring network operators to ensure their networks are protected against interference, damage, or unauthorized access.

- **Maturity**

Offering rich documentation and practical examples, AWS provides a more global infrastructure, more services, better user experience, much more comprehensive documentation, and a broader worldwide community.

¹³ <https://www.canalys.com/newsroom/worldwide-cloud-infrastructure-services-Q1-2020>



Figure 3: 2020 Magic Quadrant for Cloud Infrastructure as a Service¹⁴

- **Global Clients**

A great majority of AWS clients are based in the USA. The next area for AWS in terms of prominence is the UK, followed by the rest of Europe, and then farther regions such as India and China.

- **Collaborated with Local Partners**

Amazon Web Services China (Beijing) region and Amazon Web Services China (Ningxia) region are the two Amazon Web Services Regions located within China. To provide the best experience for customers in China and to comply with China's legal and regulatory requirements, Amazon Web Services has collaborated with China local partners with proper telecom licenses for delivering cloud services.

The service operator and provider for Amazon Web Services China (Beijing) Region based out of Beijing and adjacent areas is Beijing Sinnet Technology Co., Ltd. (Sinnet), and the service operator and provider for Amazon Web Services (Ningxia) Region based out of Ningxia is Ningxia Western Cloud Data Technology Co., Ltd. (NWCD). The new AWS Asia Pacific (Hong Kong) Region was launched in April 2019.

¹⁴ <https://www.zdnet.com/article/google-cloud-gains-in-gartners-2019-cloud-infrastructure-magic-quadrant/>



- **Accessibility**

AWS China Gateway provides information that helps customers of all sizes to get started in using AWS to extend their business with AWS in China - <https://aws.amazon.com/china-gateway/>.

- **ICP Filing through AWS Cloud**

AWS China can work with Sinnet & NWCD to help one on ICP process. For details on the offered services, please visit: <http://amazonaws.cn/about-aws/regional-product-services/>

- **Free Trial**

AWS Cloud also allows subscribers to use and access their cloud solutions and services on a trial basis.

Disadvantages:

- **Pricing**

As was mentioned above, AWS is considered to be more expensive than Ali Cloud, and see [Appendix 1](#) for relevant links.

- **Potential Discriminations**

In 2020, the Beijing Municipal High People's Court ruled that the trademark for the term "AWS" belonged to ActionSoft Science & Technology Development Co., a Chinese software and data services company, according to a court verdict published Dec. 30. The court ordered Amazon to stop using the term AWS or any similar logos in China and pay compensation of 76.5 million yuan, equivalent to \$11.8 million, to ActionSoft.¹⁵ **It remains as a question whether AWS would subject to further discrimination or controls in the future, given the fact that Beijing always strongly supports domestic players over foreign players, especially regarding data security issues.**

For more information and registration in English go to [Amazon AWC China website](#), and to [AWS China Gateway portal](#), that provides a one-stop service to customers outside of mainland China to leverage AWS China Regions. In addition, English Consultants' Connections Details can be found in [Appendix 2](#) below.

¹⁵ <https://www.wsj.com/articles/amazon-banned-from-using-aws-logo-in-china-trademark-ruling-11609841232>



Appendix 1 Pricing Information

To obtain the estimated price based on your specific inquiries and needs, please refer to the pricing calculators below.

Alibaba Cloud: <https://www.alibabacloud.com/pricing-calculator>

AWS China: <https://www.amazonaws.cn/en/pricing/>

Tencent Cloud: <https://intl.cloud.tencent.com/pricing/cvm/calculator>

Huawei Cloud: <https://www.huaweicloud.com/intl/en-us/pricing/#/ecs>

Baidu Cloud: <https://cloud.baidu.com/doc/Pricing/index.html>

Azure China: <https://www.azure.cn/pricing/calculator/> (in Chinese only)



Appendix 2 English Consultants' Connections Details

Due to the fact that cloud service is so big and client's demands are often diversified and personalized, most of the cloud service providers suggest interested companies to fill out the inquiry form on their websites, elaborating companies' specific needs and expectations. This way, the cloud service provider can assign the specialist "cater to" or know the stuff best and help.

In addition, please find several relevant contacts on the different platforms for further consultation:

- **Alibaba Cloud**

Official Website: <https://www.alibabacloud.com/>

Unfortunately, there is no Ali Cloud client service specialist who is exclusively responsible for Israel. However, one could fill out an inquiry form <https://www.alibabacloud.com/contact-sales> and wait for an exclusive business advisor (in English) to respond. Live-chat and technical support are also available in English through <https://www.alibabacloud.com/contact-sales>.

After registering an account on Ali Cloud, the system will automatically assign a consultant in English and provide support.

- **AWS China**

Official Website: <https://www.amazonaws.cn/en/>

EN consultants' connections details:

Amazon Web Services Support

<https://console.amazonaws.cn/support/home?region=cn-north-1#/>

Rosie Gong

Outreach Manager, AWS China

Tel: 86-10-5657 3677

Mobile: 86-153 7846 8336

Email: rosiegcx@amazon.com

Ricky Zhang

Demand Generation Representative, AWS China

Mobile: 86-150 8683 5998

Email: yuanfez@amazon.com



- **Tencent Cloud**

Official website: <https://intl.cloud.tencent.com/>

Tencent are represented in Israel by [GateHub](#) who are also assisting Israeli companies with accessing their cloud services:

Itay Daniel Gantz

Partner COO

Mobile: 972 54 648 0103

Email: i_gantz@gatehub.co.il

In addition, one could fill out an inquiry form <https://intl.cloud.tencent.com/contact-us> and wait for an exclusive business advisor (in English) to respond.

Call the sales 7x24 Hotline

+852 800-964-163 (Toll Free)

+852 800 906 020 (Toll Free)

- **Huawei Cloud**

Official website: <https://www.huaweicloud.com/intl/en-us/>

Unfortunately, there is no Huawei Cloud client service specialist who is exclusively responsible for Israel. However, one could fill out an inquiry [form](#) for Huawei Cloud and wait for an exclusive business advisor (in English) to respond.

Call the sales hotline or email Huawei Cloud: intlsales@huawei.com

Hotline: +86-4000-955-988

- **Baidu Cloud**

Official Website: <https://intl.cloud.baidu.com/>

Register and submit a ticket to get support (English service available)

<https://login.bce.baidu.com/?lang=en>

Unfortunately, there is no Baidu Cloud client service specialist who is exclusively responsible for Israel.

However, one could call its hotline: +86-4008-777-818.



- **Azure China**

Official website: <https://www.azure.cn/en-us/>

21Vianet Group is the largest carrier-neutral Internet and data center service provider in China. It is the exclusive operator of Microsoft Azure. 21Vianet provides the first line support services for all Azure China customers. Customers are expected to raise a service request (SR) through the China Azure online portal or the support hotline +86-400-089-0365.